



MAKING AN IMPACT ON U.S. MANUFACTURING

NIST
National Institute of
Standards and Technology
U.S. Department of Commerce

Buy America Transit Supply Chain Connectivity Forum

APTA Rail Conference

Salt Lake City, UT

June 24, 2015



U.S. Department of Transportation
Federal Transit Administration



MEP.ORG
PROFITABILITY IN
MANUFACTURING

Agenda

8:00am	Registration/Continental Breakfast
8:30am	Welcome Remarks and Forum Introduction
9:00am	U.S. DOT Keynote and Buy America Overview
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MEP.ORG
PROFITABILITY IN
MANUFACTURING

Chad Parker
Executive Director



Why Utah? Buy America Supply Chain Connectivity Forum

Q. Val Hale

Executive Director

Utah Governor's Office of Economic Development



LIFE
UTAH
ELEVATED



Utah Governor's Office of
Economic Development
BUSINESS • TOURISM • FILM

June 24, 2015

Vision

Utah will lead the nation as the best performing economy and will be recognized as the premier global business environment and tourist destination.

Mission

GOED's mission is to enhance quality of life by increasing Utah's revenue base and improving employment opportunities.



Recent Accolades



#1 Pro-Business State



#1 State for Small Business



#1 State for Business
and Careers



Top 10 ranking in all categories
U.S. Chamber of Commerce

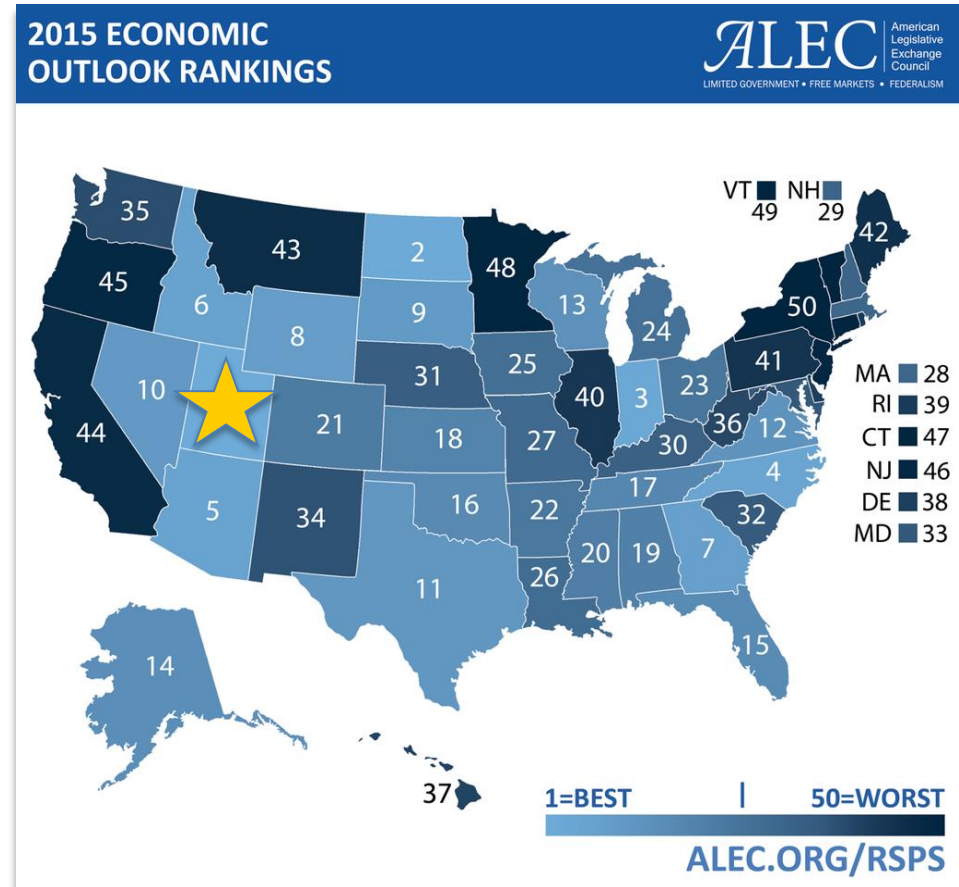


Utah Governor's Office of
Economic Development
BUSINESS • TOURISM • FILM

The Big Picture – Utah

#1 economic outlook
since 2008

Job growth more than
2x national average



Utah has 3rd lowest unemployment rate

Rank	State	Rate
1	NEBRASKA	2.6
2	NORTH DAKOTA	3.1
3	UTAH	3.5
4	VERMONT	3.6
5	IOWA	3.8
5	MINNESOTA	3.8
5	NEW HAMPSHIRE	3.8
5	SOUTH DAKOTA	3.8
9	IDAHO	3.9
9	MONTANA	3.9



...and the 4th most diverse economy

Source: <http://www.bls.gov/web/laus/laumstrk.htm>



LIFE
UTAH
ELEVATED



Utah Governor's Office of
Economic Development
BUSINESS • TOURISM • FILM

Why Utah?

“Crossroads of the West”

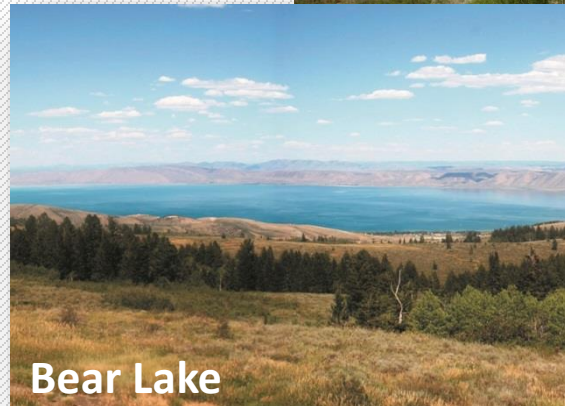
- SLC/Provo airports host hundreds of daily flights
- 1-day truck route from most cities in western U.S.
- Fastest broadband in western U.S.

Low Business Cost

- Top 10 in the State Business Tax Climate Index
- Affordable real estate and utilities
- Low healthcare costs

Workforce

- #2 fastest growing state in the U.S.
- Residents speak 130+ languages



6 Key Industry Clusters

- Software/IT
- Financial Services
- Life Sciences
- Energy and Natural Resources
- Aerospace and Defense
- Outdoor Recreation



Utah Manufacturing: Fast Facts

- More than **3,800** manufacturers
- More than **130,000** Utahns employed
- Industry payroll exceeds **\$6.1 billion**

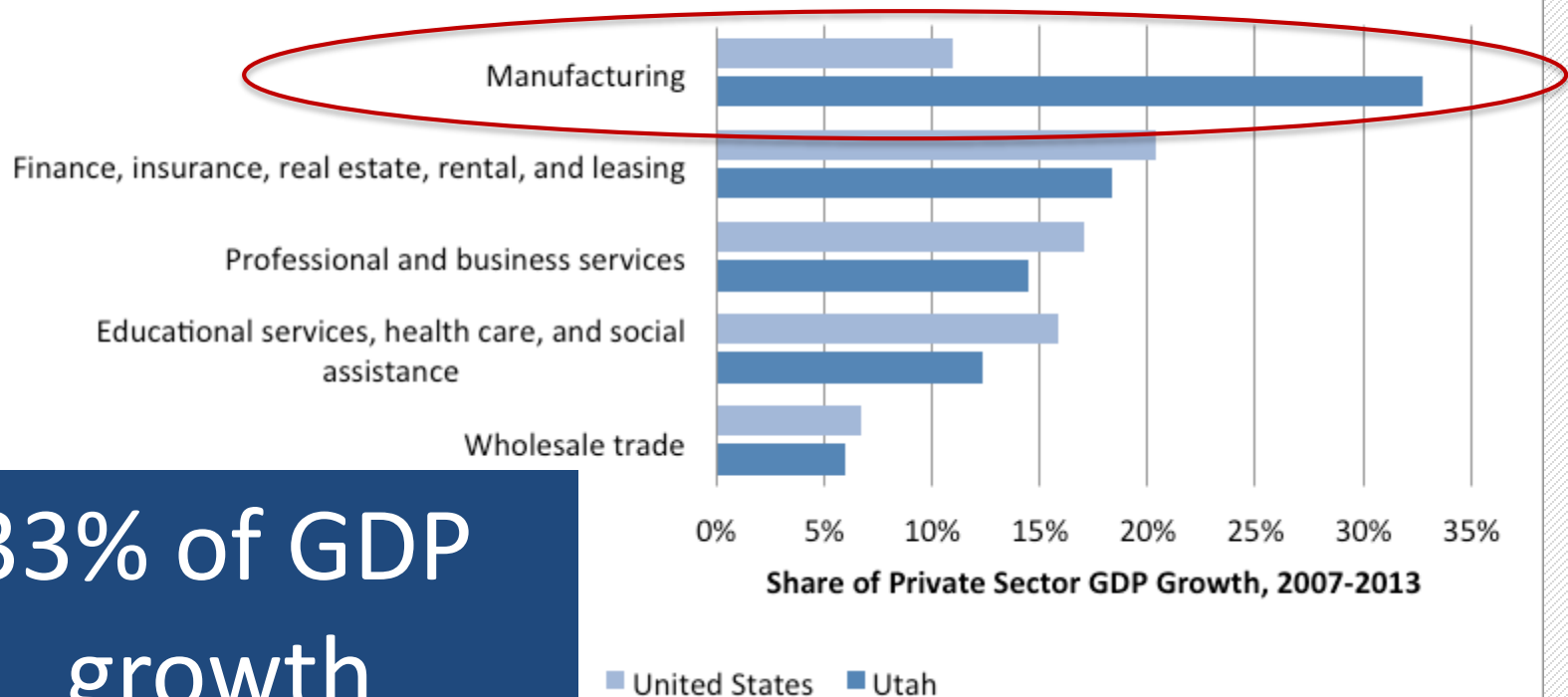
Utah #14 in Manufacturing/GSP



Manufacturing as a Growth Driver

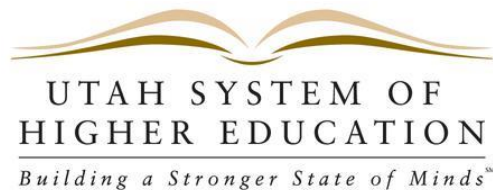
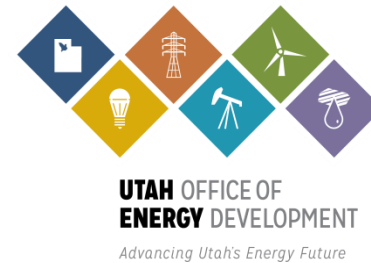
Top 5 Sectors Driving GDP Growth Rates

2007-2013



33% of GDP
growth

GOED Strategy: Collaborate



Thank you

business.utah.gov

Follow "BusinessUtah"



LIFE
UTAH
ELEVATED®

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KEYNOTE



U.S. Department of Transportation
Federal Transit Administration

Carolyn Flowers
Senior Advisor to FTA Administrator
Federal Transit Administration



Buy America 101

Richard Wong

Federal Transit Administration

Washington, DC



Who Should be Aware of Buy America?

- Transit Agencies
- Government Officials
- Vehicle Manufacturers
- System Vendors/Aggregators
- Component Suppliers
- Architects and Designers



What Does Buy America Cover?

- Steel & Iron Products
- Manufactured Products
- Rolling Stock & Their Related Systems (train control, traction power, communications)



Steel & Iron Products

- Construction Materials
- Beams, Girders, Running Rail, Power Rail
- Excludes steel or iron components of rolling stock or manufactured products
- 100% US-manufactured



Manufactured Products

- The “catch-all”
- Includes “systems”
- 100% US manufacturing
- 100% US-made components
- Does not extend down to subcomponents



Rolling Stock

- Buses, Railcars, Vans
- Final Assembly in the US
- 60% US-made components
 - 60% US subcomponents
- Train control, traction power, & communication equipment



What Kind of Waivers Are Available?

- Non-availability
- Cost-differential
- Public Interest



Three Standing Public Interest Waivers

- Products on the FAR's Non-Availability Schedule (48 CFR 25.104)
- Microprocessors, Microcomputers, and Software
- Small purchases



How Do I Obtain a Waiver?

- Apply – 49 CFR 661.9
- Federal Register Publication
Notice and Comment
- NIST/MEP Scouting Search
- No guarantee of success



How Is Buy America Enforced?

- Petition from third party
- Triennial & State Management Reviews
- Investigations 49 CFR 661.15
- FTA's right to inspect records and documents
- FTA's right to terminate or recover funding



What's in the Buy America Pipeline?

- Updated Pre-award/Post-delivery Handbook
- GROW AMERICA proposal to increase rolling stock content
- Guidance on Security & Surveillance Systems



Where can I go for further assistance?

- www.fta.dot.gov/buyamerica
 - Regulations
 - Waivers & Decisions
 - Audit Handbooks & Guidance
 - NIST/MEP Program
 - Policy Statements



FTA Buy America Audits Agenda

- Statutory Requirement
- Pre-Award and Post-Delivery Audits of Rolling Stock
- Buy America Compliance Reviews
- Pre-Award and Post-Delivery Audit Handbook



Statutory Requirement: 49 U.S.C. § 5323(j)

- 49 U.S.C. § 5323(j)(1): “The Secretary may obligate an amount to be appropriated to carry out this chapter for a project only if the steel, iron, and manufactured goods used in the project are produced in the United States.”
- 49 U.S.C. § 5323(j)(2)(C): “. . . when procuring rolling stock (including train control, communication, and traction power equipment) under this chapter—(i) the cost of components and subcomponents produced in the United States is more than 60 percent of the cost of all components of the rolling stock; and (ii) final assembly of the rolling stock has occurred in the United States.”



Pre-award and Post-delivery Audits of Rolling Stock

- Statutory Requirement: 49 U.S.C. § 5323(m)
- Implementing Regulations: 49 C.F.R. part 663
- FTA requires its grantees and other recipients to conduct audits at the pre-award and post-delivery stages for rolling stock procurements.



Buy America Compliance Reviews

- Fourteen Documentation and On-Site Reviews including:
 - Rail and Bus Vehicle Procurements
 - Maintenance Facility
 - Transit Stations
 - Traction Power and Signal Systems
- Key Lessons Learned Included:
 - Documentation
 - Definitions
 - Buy America vs. Buy American



Key Lessons Learned

- Documentation
 - Varying levels of documentation to support different procurements' Buy America compliance.
 - Some grantees required more documentation than others.
 - Contractors required different types of documentation from their subcontractors
 - FTA's guidance should identify what constitutes proper support documentation to support certification of Buy America compliance and/or a grantee's pre-award/post-delivery audit.
 - The guidance should give FTA grantees and their contractors more confidence in what constitutes sufficient documentation to adequately verify compliance with Buy America.



Key Lessons Learned

- Definitions
 - Misapplication of definitions for end product / system / component / subcomponent
 - In both rolling stock and non-rolling stock procurements, a common theme during FTA's reviews was the misunderstanding and misapplication of FTA's Buy America definitions for "end products," "systems," "components," and "subcomponents."
 - Guidance is needed on determining subcomponents and components and how the various designations should be incorporated into the domestic content calculations for rolling stock.



Key Lessons Learned

- Buy America vs. Buy American
 - A common point of confusion, especially on non-rolling stock procurements (e.g. facilities), was that contractors and subcontractors, particularly those new to FTA-funded projects, certified compliance with “Buy American” instead of FTA’s specific Buy America requirements.
- Buy American
 - The Buy American Act passed in 1933 by Congress and signed by President Hoover on March 3, 1933 required the United States government to prefer U.S.-made products in its purchases.
 - The American Recovery and Reinvestment Act of 2009 included a 'Buy American' provision, requiring that any public building or public works project funded must use only iron, steel and other manufactured goods produced in the United States.



Pre-Award and Post-Delivery Audit Handbook

- Draft Handbook published June 16, 2015; comments due August 17th
- Major areas include:
 - Rail and Bus
 - Guidance for manufacturers and suppliers
 - Best Practices
 - Clarification of terms
 - Expectations for documentation
 - Sample Audit Reports
 - Sample Certifications
 - Sample Checklists



Pre-Award and Post-Delivery Audit Handbook

- Purpose of the handbook is to assist recipients, auditors, rolling stock manufacturers and subcontractors and suppliers in understanding and correctly applying FTA's pre-award and post-delivery audit requirements for rolling stock vehicle purchases.
- The overall aim is to guide handbook users through the necessary steps to meet the requirements as well as to bring greater uniformity to the way the industry conducts and documents pre-award and post-delivery audits of rolling stock purchases.



Buy America & Utility Relocation Recap

- FTA's Buy America requirements apply to the following:
 - *Steel and Iron*
 - *Manufactured Products*
 - *Rolling Stock*
- 49 U.S.C. 5323(j); 49 CFR part 661.



Buy America & Utilities Scope

- FTA's Buy America requirements apply to the entire FTA-funded project.
- The FTA-funded project includes locally funded contracts.



Buy America & Utilities

- Consistent with FTA's statutory requirements
 - 49 U.S.C. 5323(j)(1) In general.— The Secretary may obligate an amount that may be appropriated to carry out this chapter for a project only if the steel, iron, and manufactured goods used **in the project** are produced in the United States.
- Consistent with MAP-21 changes to FHWA's statutory requirements (Section 1518 of MAP-21, adding 23 USC 313(g)).



Buy America & Utilities Guidance Letters

- New Starts Working Group
- Charlotte Area Transit System and LACMTA
- Cincinnati Streetcar
- Southern California Edison



Questions?



Federal Transit
Administration
www.fta.dot.gov

Richard.Wong@dot.gov
<http://www.fta.dot.gov/buyamerica>



U.S. Department
of Transportation
**Federal Railroad
Administration**



OFFICE OF RESEARCH & DEVELOPMENT

FRA Buy America Update

KEVIN KESLER
CHIEF, ROLLING STOCK R&D DIVISION
Office of Research and Development
Office of Railroad Policy and Development

FRA Buy America Update

- Passenger Rail Investment and Improvement Act of 2008 (PRIIA)
- American Recovery and Reinvestment Act of 2009 (ARRA)
- Buy America Requirement - 100% America made components
- Guidance available through FRA website
- NIST MEP Supplier Forums held across the country
- NIST provided supplier scouting
- Secretary can grant waivers – pathway to future US supply is preferred
- Safety Critical components for high speed rail
- 10 waivers granted to date

FRA Buy America Update

(From FRA Website)

Open Waiver Requests (3)

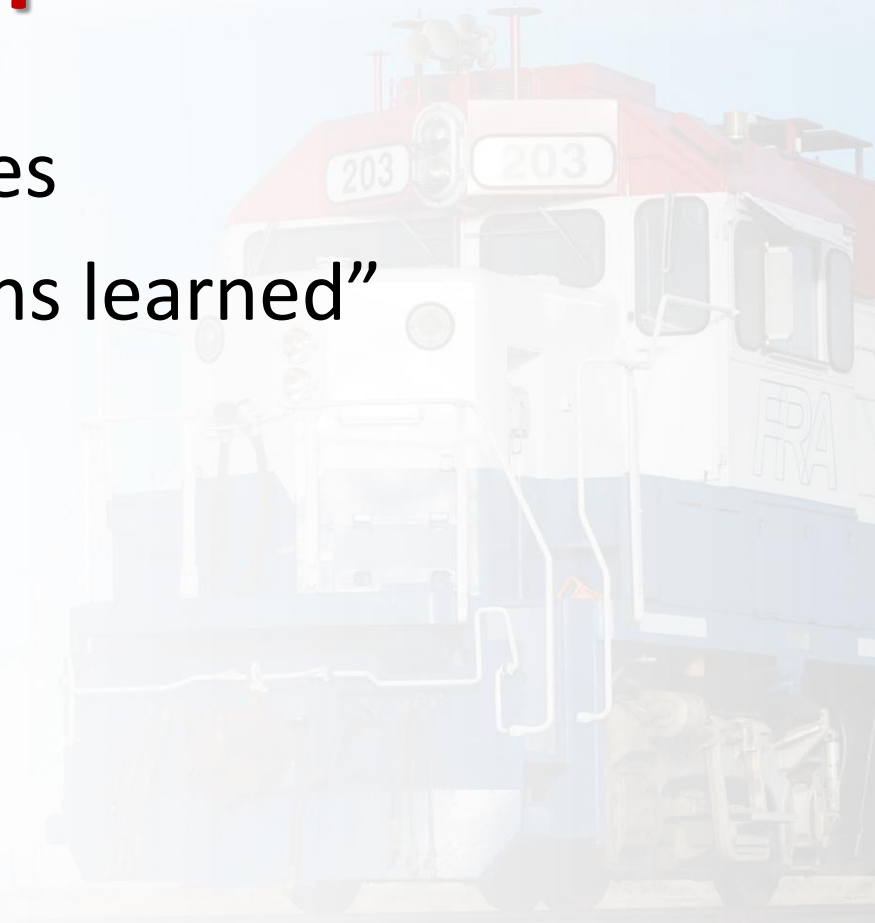
- Amtrak High Speed Trainsets Components Waiver Request
- Sacramento (CA) Linoleum Flooring Waiver Request
- RIDOT and Amtrak, Turnout Components by Nortrak.

Completed Waivers (10)

- NNEPRA Steel Track Nuts
- Amtrak Acela Central Block components
- WSDOT Vossloh Concrete Tie Components
- Illinois DOT ITCS Components (ethernet cable, antennae, and router)
- Amtrak 136RE No 32.75 Special Turnouts (ZU 1-60 steel left and right switch point rail sections and roller assemblies)
- Amtrak High Speed Rail Prototype Trainsets
- California High Speed Rail Authority (CHSRA) High Speed Rail Prototype Trainsets
- Illinois DOT, SureClose Gate Hinge
- LIRR Turnout Components (ZU 1-60 steel left and right switch point rail sections and roller assemblies)
- Sacramento (CA) Variable Refrigerant Flow (VRF) System Waiver Request

FRA Buy America Update

- Implementation continues
- Internal review of “lessons learned”



FRA Buy America Update

Thank You

Kevin Kesler

kevin.kesler@dot.gov

Questions/Comments?



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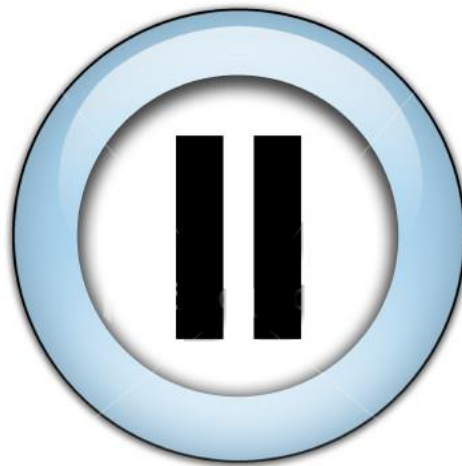




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BREAK



**DON'T FORGET TO STOP BY THE
REGISTRATION DESK TO SIGN UP FOR
YOUR ONE-ON-ONE MEETINGS**



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Transit Original Equipment Manufacturer and Tier 1 Supplier Panel

- Alstom Transport
- BAE Systems
- Faiveley Transport North America
- Stadler Rail
- Wabtec

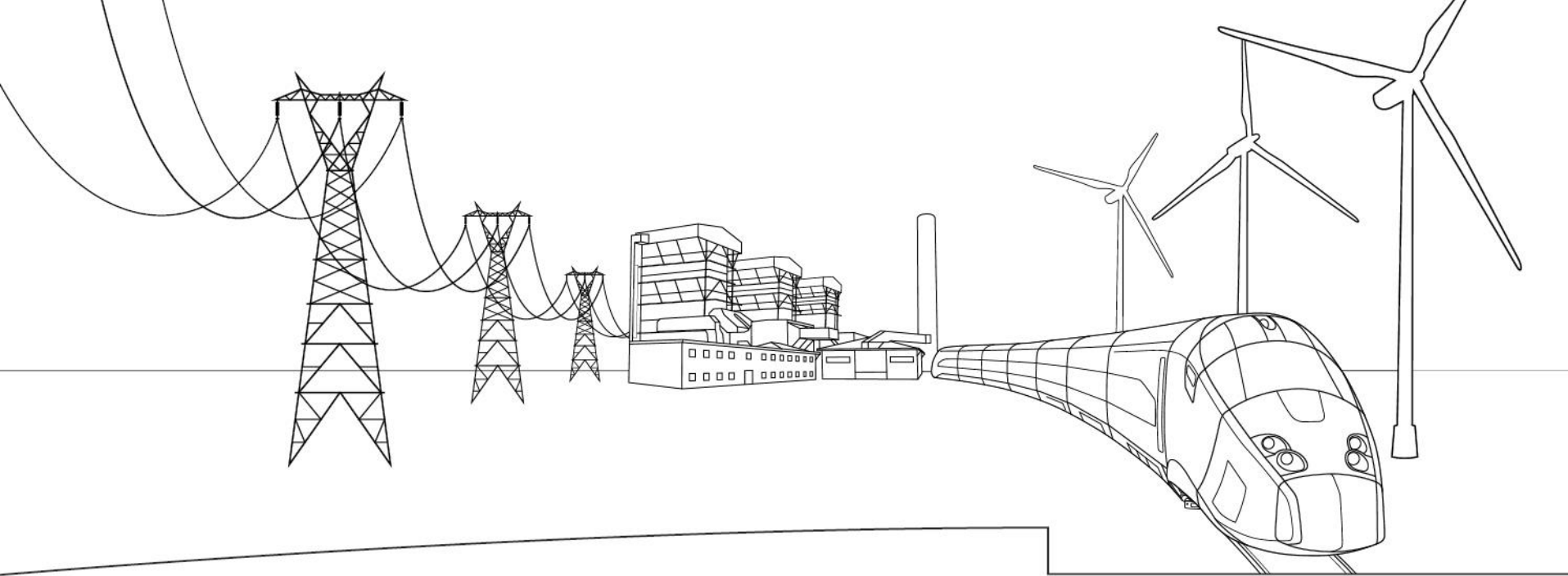


BAE SYSTEMS



STADLER





Alstom Transport

Ian Brodie

Salt Lake City, UT

24th June 2015

ALSTOM
Shaping the future

Alstom Transport: a global leader in the rail industry

Four activities

NEW TRAINS



COMPLETE TURNKEY SYSTEMS*



PARTS, OVERHAULS, SERVICES

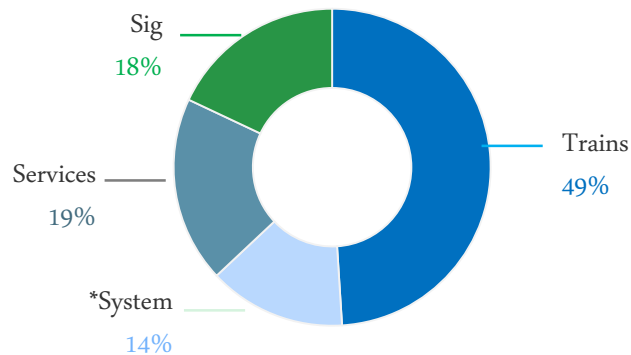


SIGNALLING

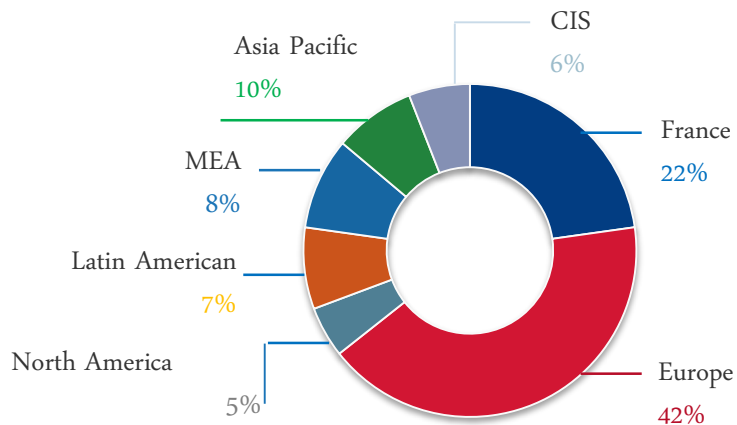


2013/14 commercial performance

2013/14 Sales Breakdown



*Inclusion Infrastructure



2013/14 Key Figures

In €Bn

Backlog 23.2

Orders 6.4

Sales 5.9

IFO 0.3
IFO % of sales 5.6%

28,300 employees across 90 sites

1 Offering



« With Alstom, designing fluidity becomes a reality »

**Four axes drive the promise we make to our customers....
....across two product universes**

URBAN

Congestion...Mobility....Environment

Alstom anticipates the new urban challenges & designs solutions to meet them

PASSENGERS

Seamless & safe journeys

PROXIMITY

Close working relationships with customers

EXECUTION

Seamless planning & operation, optimized lifecycle costs

INNOVATION

State-of-the-art solutions tailored to each customer

MAIN LINE

Rail vs. air & road...Comfort...Safety

Alstom offers a complete & competitive range of products & services for all operators across the globe

Tramways: to reflect a city 's unique identity & suit all passenger needs

- **1,800** Citadis ordered in **over 40** cities
- **1 in 4** low-floor trams in service manufactured by Alstom
- **6 billion** passengers & **500 million km** since 2000
- **1st** catenary-less tramway in service
- **1st** easily accessible tramway

Casablanca

Bordeaux

Aubagne

Rotterdam

Montpellier

Paris



Dubai

Le Mans

Nice

Istanbul

Madrid

Reims

Dijon

Tram-trains: an alternative means of transport

- **No change** in transit mode between city centre & suburb
- The **only** tram-train with 100% low floor running at 100 km/h
- **200** Citadis Dualis & **34** Citadis Spirit ordered



Rhône-Alpes - Lyon



Pays de la Loire - Nantes



Ottawa

Metros: an innovative model offering a wide range of solutions

- **4000+** Metropolis sold in **40+** cities
- **100,000** passengers per hour & per direction
- **60+ years** expertise

Panama City



Chennai



Barcelona



Lausanne



Paris



Santiago



Singapore



Amsterdam



Santo Domingo



Shanghai

Urban signalling: improving network safety & fluidity

- Urbalis: signalling solution for higher capacity with minimal headway
 - **25%** of all radio CBTC solutions in operation
 - Urbalis Fluence: latest signalling solution with direct train-to-train communication
- Security & control: Iconis, Pacis



Lausanne Metro - Urbalis



Lille Metro - Urbalis Fluence



Hong Kong control centre

Urban systems: unique integrator capabilities

- Complex project management & system engineering
- PPPs & concession
- **1st** in tramway integrated solutions
- Innovative integrated solutions
 - Axonis – the **1st** optimised integrated metro solution, affordable & quick to build
 - Catenary-free range for tramways for **optimum** visual integration into the cityscape



Bordeaux



Orléans



Reims



Axonis



Nottingham



Singapore

Urban infrastructure: innovative technologies

- Track

- Appitrack holds the world track-laying record: **¼ mile** of single track in one day
- **400+** single-track miles of track installed

- Electro-mechanical (stations & depots)

- Electrification

- **13 million km** travelled with APS catenary-free solution
- **600+** km of lines equipped with overhead contact system and/or power supply solutions
- Hesop reversible substation for urban networks recovers **more than 99%** of traction energy generated by braking



Hesop, La Rochelle



Appitrack, Orleans



APS, Reims

Urban services: a full offering for optimum fleet performance & reliability

- Maintenance
 - **400+** tram & **1,700** metro cars maintained
- Parts & repairs
- Modernisation
- Support services



Reims



Casablanca



Singapore



Bucharest



Paris

Components: key end-product differentiators

- Traction & auxiliary
- Bogies & motors



Components for traction systems



Citadis-Dualis bogie



Element of Citadis bogie



Metropolis bogie



Main Line

Suburban trains: for fluid commuting

- Around **4,600** X'Trapolis cars ordered
 - **3,600** cars of X'Trapolis Mega for South Africa - the world's largest fleet renewal
- Up to **30,000** passengers per hour and per direction
- Double-deck for greater capacity
 - **1,725** passengers per trainset on RER A (Paris) which transports 1 million people/day



Melbourne



Spain



Paris



South Africa

Regional trains: responding to diverse needs

- More than **1,200** Coradia currently operating in **9** European countries and Canada
- **1st 100%** full low-floor bimode regional train – Coradia Polyvalent for Régiolis* (France)

Coradia Polyvalent (France)



Coradia Continental (Germany)



Coradia Lint (Germany)



Coradia Nordic (Sweden)



Coradia Liner (France)



Coradia Meridian (Italy)



Coradia Duplex (France)

High-speed trains: an incomparable concept

- More than **500** Pendolino ordered
- Cross-border train, certified in **13** countries and soon to be **14**
- **1 out of 3** trains in service worldwide running **at more than 200 km/h** uses Alstom technology



Italy



Switzerland



Russia & Finland



United Kingdom

Very high-speed trains: offering the most proven know-how

Euroduplex

- **Over 700** VHST trains ordered
- **Best** capacity on the market

AGV

- **25** sold to NTV, all in commercial service
- **1st** train to combine articulated architecture with distributed power for maximum safety



Euroduplex (France)



AGV .italo (Italy)

Passenger & freight locomotives: committing to a sustainable modal shift

- **100 years'** expertise
- **Leader** in installed base
- A **localisation** model
- Co-development with **TMH**, the world leader in locomotives



KZ8A (Kazakhstan)



Prima II (Morocco)



KZ4AT (Kazakhstan)



EP20 (Russia)

Main Line signalling: for optimum efficiency & complete safety

- Atlas

- Proven ERTMS solution for **100%** interoperable trains
- **#1** worldwide for onboard equipment (**70%** of market)

- Iconis

- Scalable & modular control centre solution
- **80** systems in operation worldwide



Atlas &
X'Trapolis,
Melbourne



Betuweroute, freight corridor A,
Netherlands



Bologna control centre

Main Line systems: unique integrator capabilities

- Global system knowledge for whole project optimisation



Republic of Korea - KTX

Main Line infrastructure: minimising track footprint while providing sustainable solutions

- Track
 - Around **600** single-track kilometres installed
- Electro-mechanical
- Electrification
 - Over **3,000 km** of lines equipped with 25 kV catenary and/or power supply substations



KTX infrastructure, Republic of Korea



Athens Suburban Rail, Greece

Main Line services: a full offering for optimum fleet performance & reliability

- Maintenance
 - **7,000** high-speed & regional cars & **300** diesel & hybrid locomotives
- Parts & repairs
- Modernisation
- Support services



WCML, UK



Locomotive maintenance,
France



AVE, Spain

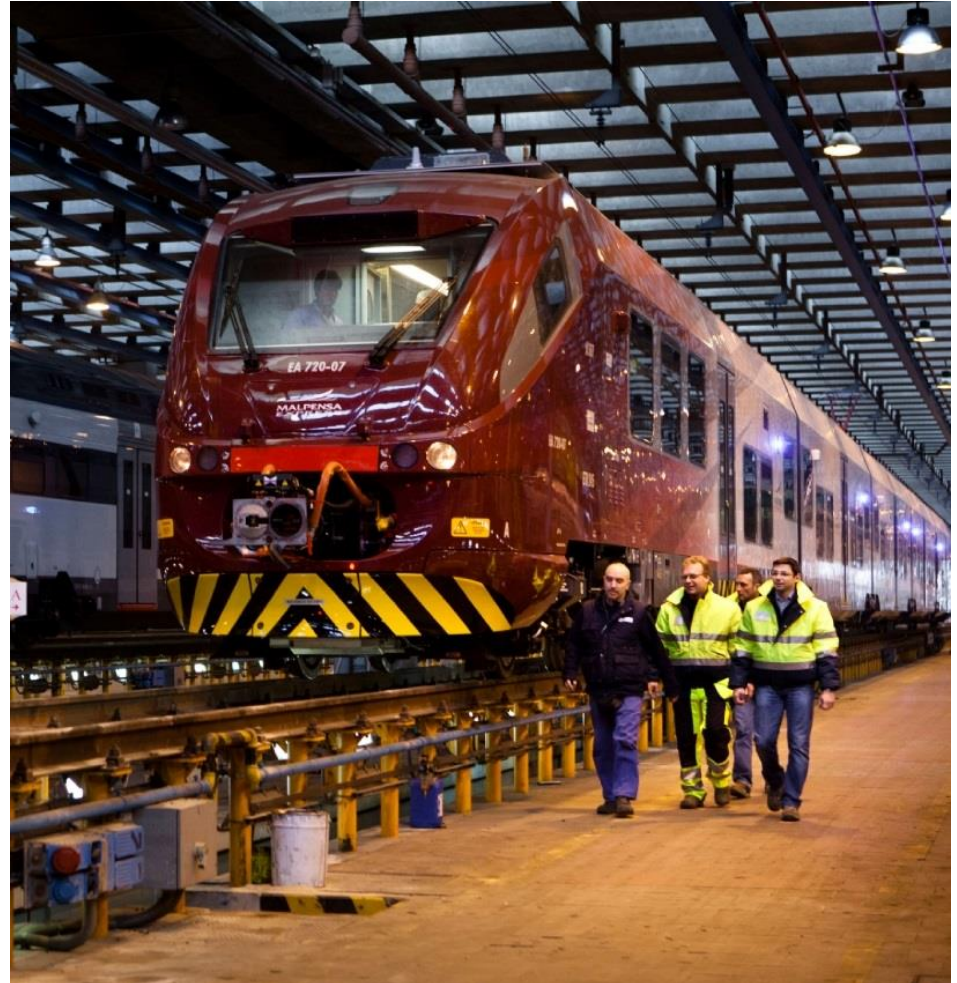
ALSTOM Supplier Experience

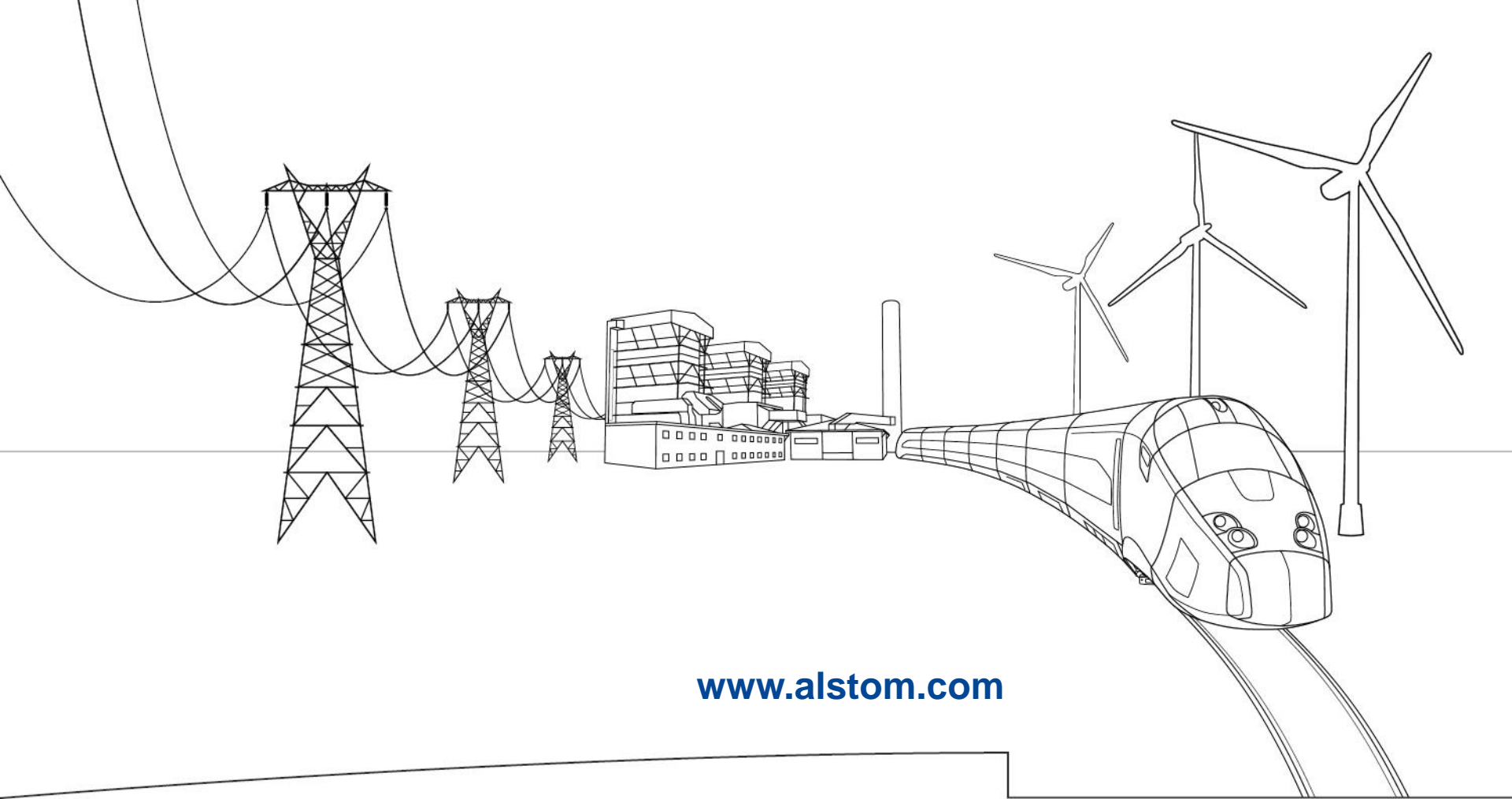
Expectations

- Responsive
- Reliable
- Compliant

Benefits

- Project-Based
- Long-term relationship
- Diverse Needs





www.alstom.com

ALSTOM
Shaping the future

Series-E: The Smart Electric

Electric Power & Propulsion

June 2015



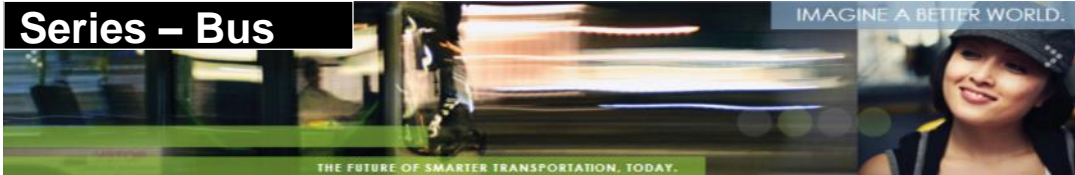
BAE Systems

A global defense, aerospace and security company employing 93,500 people worldwide. Our wide-ranging products and services cover air, land and naval forces, as well as advanced electronics, security, information technology, and support services.

Cutting-Edge Hybrid Technology

Evolved from 20+ years of investment in aircraft technology

Series – Bus



Parallel – Truck



Power Gen



Marine / Rail



Commitment to Market

- Each year 5,000 HybriDrive systems travel 165 million miles of revenue service, carry 825 million people and save 11 million gallons of fuel and 120,000 tons of CO2 from being released into the air.

Supplying Leading OEMs

NOVABUS

GILLIG

IVECO

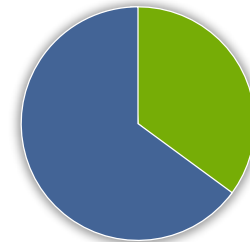
**ALEXANDER
DENNIS**

NEW FLYER

DAIMLER

Market Leader

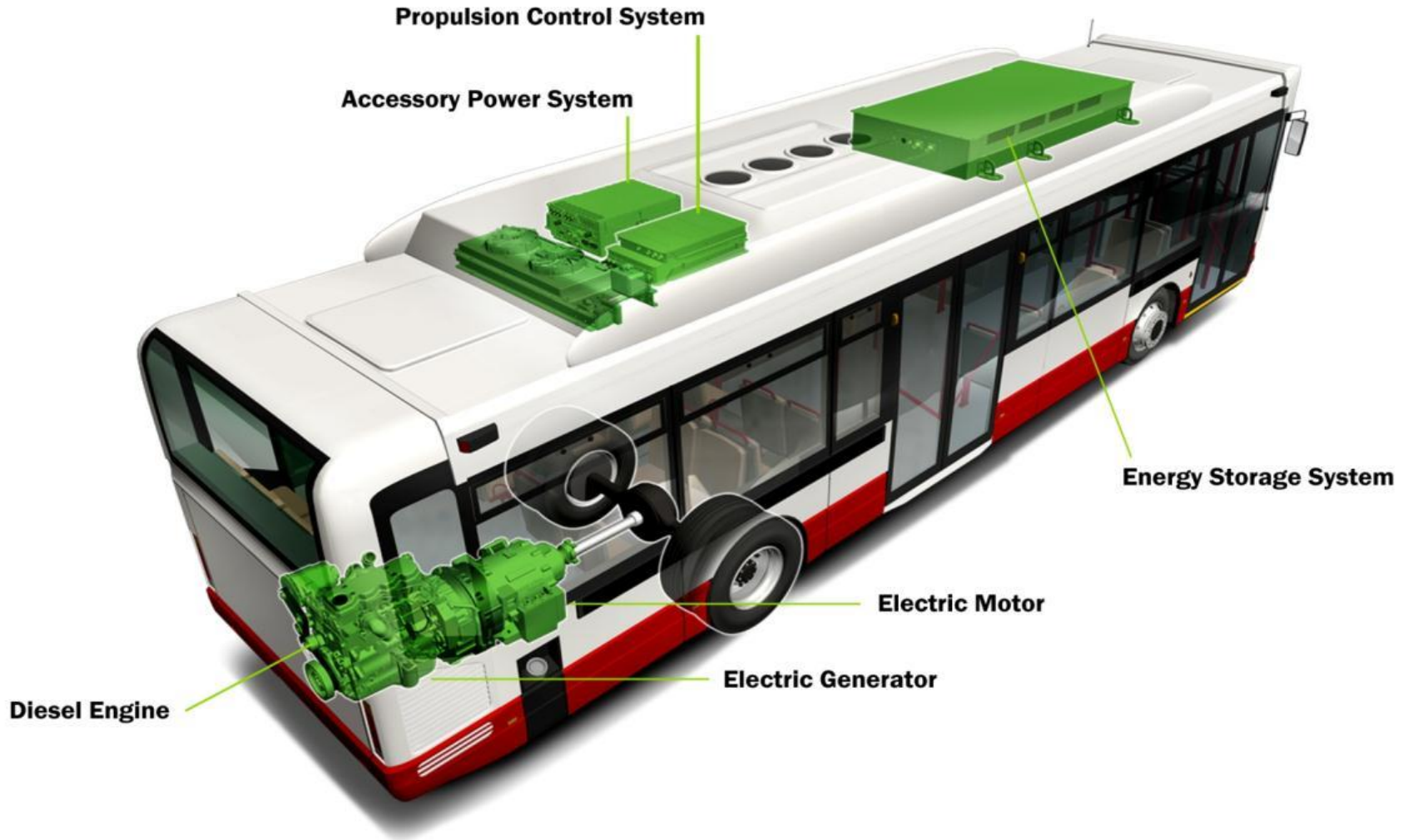
Hybrid Transit Bus Propulsion Providers
North America and Europe



HybriDrive Solutions

Others

HybriDrive Propulsion Systems



Criteria to become a BAE SYSTEMS Supplier

- ✓ Ability to consistently comply with the quality, delivery and service requirements
- ✓ Have a satisfactory past performance record
- ✓ Have the financial resources or ability to obtain such resources to deliver the contract

Current Supply Chain Needs

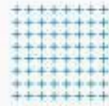
- ✓ Electrification Technologies
 - ✓ Exploring technologies and logistic modeling that facilitate the effective and efficient delivery of our products
-

BAE SYSTEMS' CONTACT INFORMATION

Supplier Portal where you can self-register:

<https://baesystems.hicx.net/bae/hicxesm-portal/app/login.html;jsessionid=1w5k10p400dtmai3yvmcjxh4d>

Steve Marusich – Subcontract Program Manager
Telephone Number (607) 770-3721



➤ FOR ALL THE TRAINS IN THE WORLD

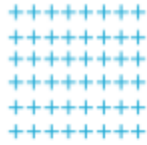
Faiveley Transport North America HVAC&R Systems

Prepared by Brandon Gasiewicz



Overview

- 1 – HVAC Activity Centers**
- 2 – FTNA Engineering Overview**
- 3 – HVAC References Worldwide**
- 4 – HVAC References in North America**
- 5 – Main Components in an HVAC Unit**
- 6 – Main Types of HVAC Unit Solutions**
- 7 – Unique Design Challenges**
- 8 – North American Market Challenges**
- 9 – HVAC Concepts**
- 10 – Technology Competitive Advantages**
- 11 – Early Design Questions**



HVAC Activity Centers

FRANCE

- FT NSF, LILLE
 - Sales, Engineering, Production

USA

- ELLCON NATIONAL
 - Sales, Engineering, Production, Customer Services

BRAZIL

- FT do Brazil
 - Sales, Engineering, Production

GERMANY

- FT LEIPZIG
 - Center of Competence (R&D)
 - Sales, Engineering, Manufacturing, Customer Services

CZECH REPUBLIC

- FT PILZEN
 - Manufacturing

CHINA

- SFRT
 - Sales, Production, Engineering, Customer Services

INDIA

- FT INDIA
 - Sales, Production



FT Engineering Group Overview

- **All engineering departments across Faiveley have similar organizations**
- **Each engineering site is organized by competencies for products and systems responsibilities**
- **All groups act according to the same Engineering Processes**
 - Reviewed yearly to confirm compliance with the Faiveley Management System
- **2 Types of Engineering Groups within Faiveley Transport:**
 - (1) COC: Center of Competence
 - Develops products/components for use in various applications/systems
 - Shares design activity with Local Entities
 - Provides specialist support (Acoustics, S/W, Structural FEA, etc.)
 - (2) Local Entity:
 - Incorporates approved products/components for use in various applications/systems
 - Adapts existing products to meet customers needs
 - Shares design activity with COC



FTNA HVAC Systems - Worldwide



- HVAC systems supplied from Faiveley Transport North America Worldwide





HVAC System Installed Base in USA

Project	Car Category	Car Builder	Qty	Start	Finish
Las Vegas People Mover	Tram/LRV	Bombardier	4	2000	2000
Innovia DWF Int'l Airport	Tram/LRV	Bombardier	128	2002	2003
Denver People Mover - 4 cars	Tram/LRV	Bombardier	8	2007	2007
Pittsburgh Automated People Mover 2 cars	Tram/LRV	Bombardier	2	1999	N/A
Atlanta Automated People Mover - 39 Cars	Tram/LRV	Bombardier	39	2000	N/A
San Francisco Automated People Mover - 39 Cars	Tram/LRV	Bombardier	39	2000	N/A
Miami DPM Automated People Mover - 29 cars	Tram/LRV	Bombardier	29	2007	N/A
Las Vegas Automated People Mover - 16 cars	Tram/LRV	Bombardier	32	2007	2008
Tampa Automated People Mover - 4 cars	Tram/LRV	Bombardier	8	2007	2008
Sound Transit (Seattle) 31 cars	Tram/LRV	Kinkisharyo	62	2005	2008
Valley Metro Rail (Phoenix) option 28 units	Tram/LRV	Kinkisharyo	28	2008	2008
Miami Automated People Mover 2008	Tram/LRV	Bombardier	59	2008	2008
GTW New Jersey (NJT)	EMU/DMU	Stadler	40	2001	2002
GTW New Jersey (NJT)	EMU/DMU	Stadler	40	2001	2002
Talgo US Oregon/Wisconsin	High Speed	Talgo Patentes	60	2010	2011



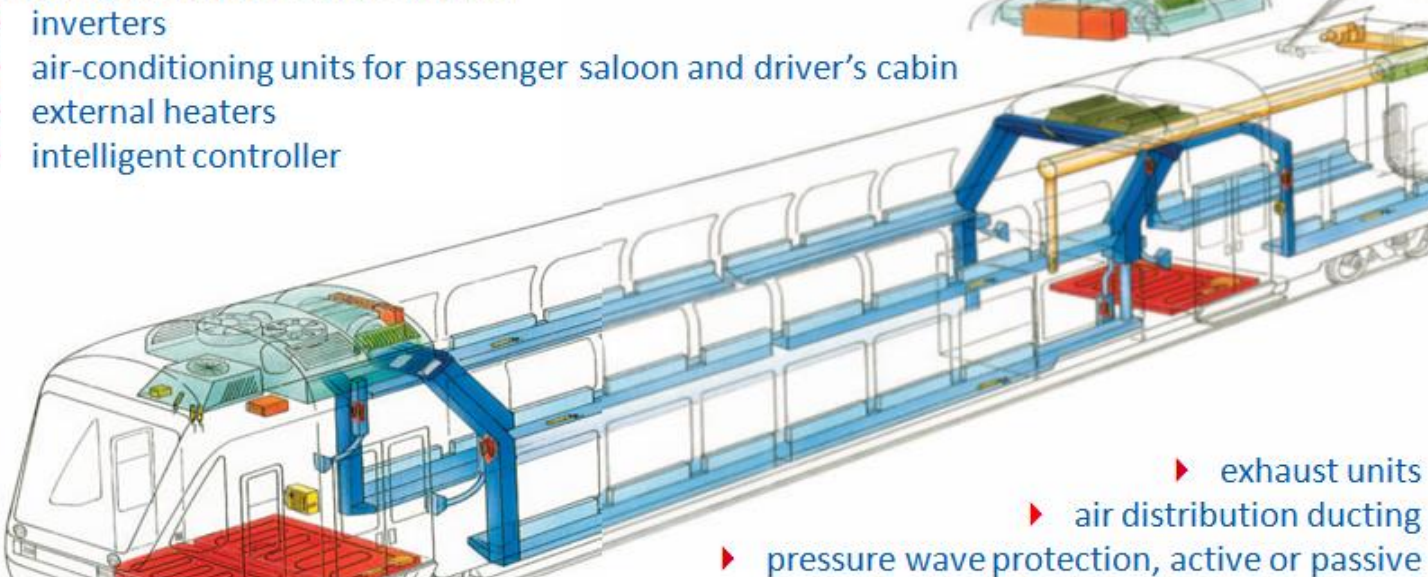
HVAC System Installed Base in USA

Project	Car Category	Car Builder	Qty	Start	Finish
M-DOT Commuter	Passenger Coach	Nippon Sharyo	25	1990	1990
Comet III	Passenger Coach	Bombardier	52	1990	1990
GTW New Jersey - Riverline	EMU/DMU	Stadler	40	2001	2002
Cleveland Rapid Transit	EMU/DMU	Tokyu Car	120	1984	1984
Atlanta Airport People Mover	Tram/LRV	Westinghouse - Bombardier	14	1984	1984
Cleveland Rapid Transit	EMU/DMU	Tokyu Car	120	1984	1984
Atlanta Airport People Mover	Tram/LRV	Bombardier	58	2001	2001
Sound Transit (Seattle) Option, 8 units	Tram/LRV	Kinkisharyo	8	2008	2008
Sound Transit (Seattle) 31 Cars	Tram/LRV	Kinkisharyo	62	2005	2008
Valley Metro Rail (Phoenix) 36 cars	Tram/LRV	Kinkisharyo	72	2006	2008
Valley Metro Rail (Phoenix) 36 cars	Tram/LRV	Kinkisharyo	72	2006	2008
Comet V - 265 cars	Passenger Coach	Alstom	530	2000	2004
Metro North/Conn Dot	Passenger Coach	Bombardier	18	1990	1990
Metro North/Conn Dot	Passenger Coach	Bombardier	10	2001	2002
SOF People Mover - San Francisco Airport	Tram/LRV	Bombardier	64	2002	2002
Houston People Mover	Tram/LRV	Bombardier	20	2002	2002
Denver People Mover	Tram/LRV	Bombardier	10	2000	2001



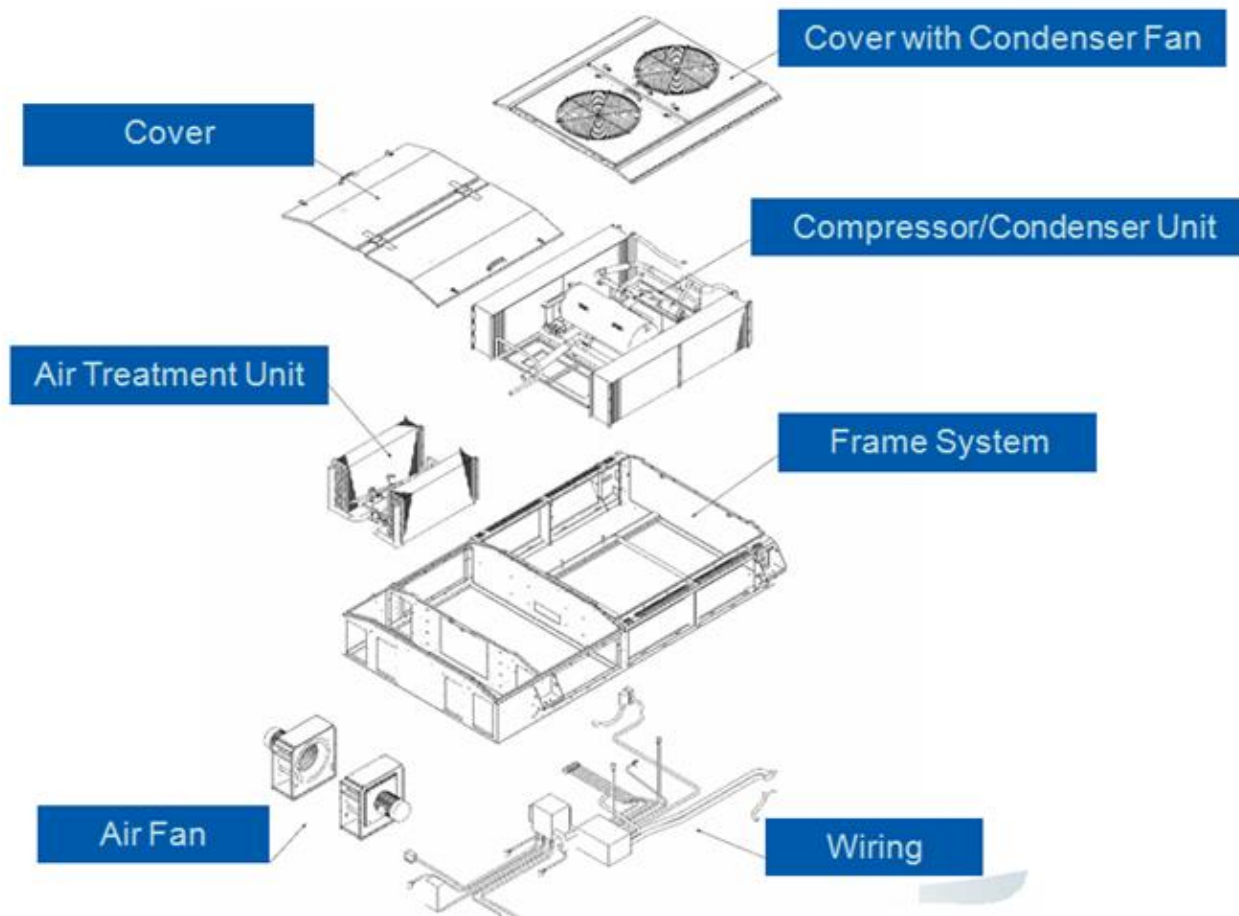
HVAC System Full Product Range

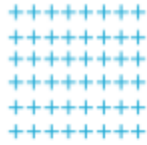
Providing a complete HVAC system:

- ▶ inverters
 - ▶ air-conditioning units for passenger saloon and driver's cabin
 - ▶ external heaters
 - ▶ intelligent controller
- 
- ▶ exhaust units
 - ▶ air distribution ducting
 - ▶ pressure wave protection, active or passive

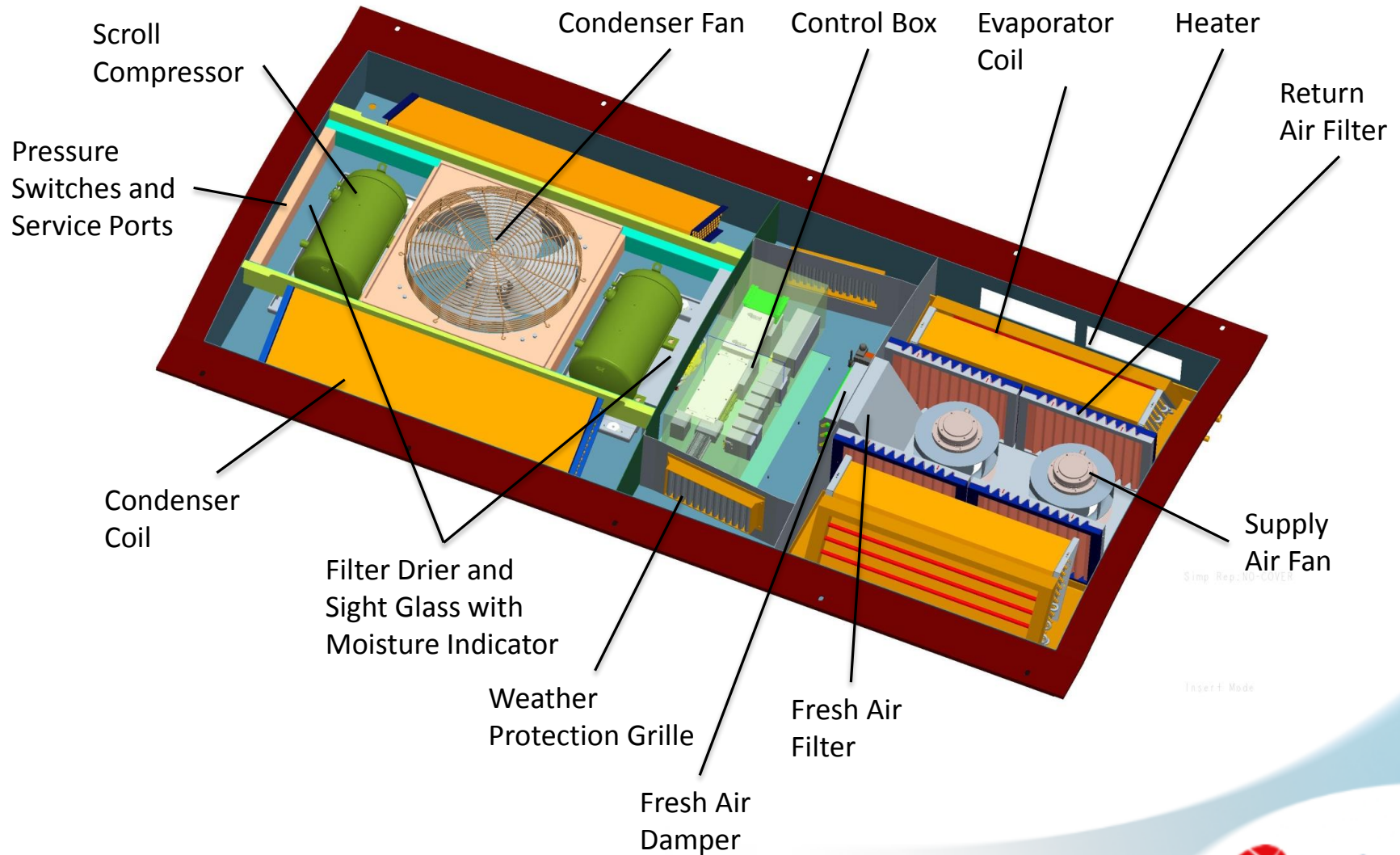


Main Components of an HVAC Unit



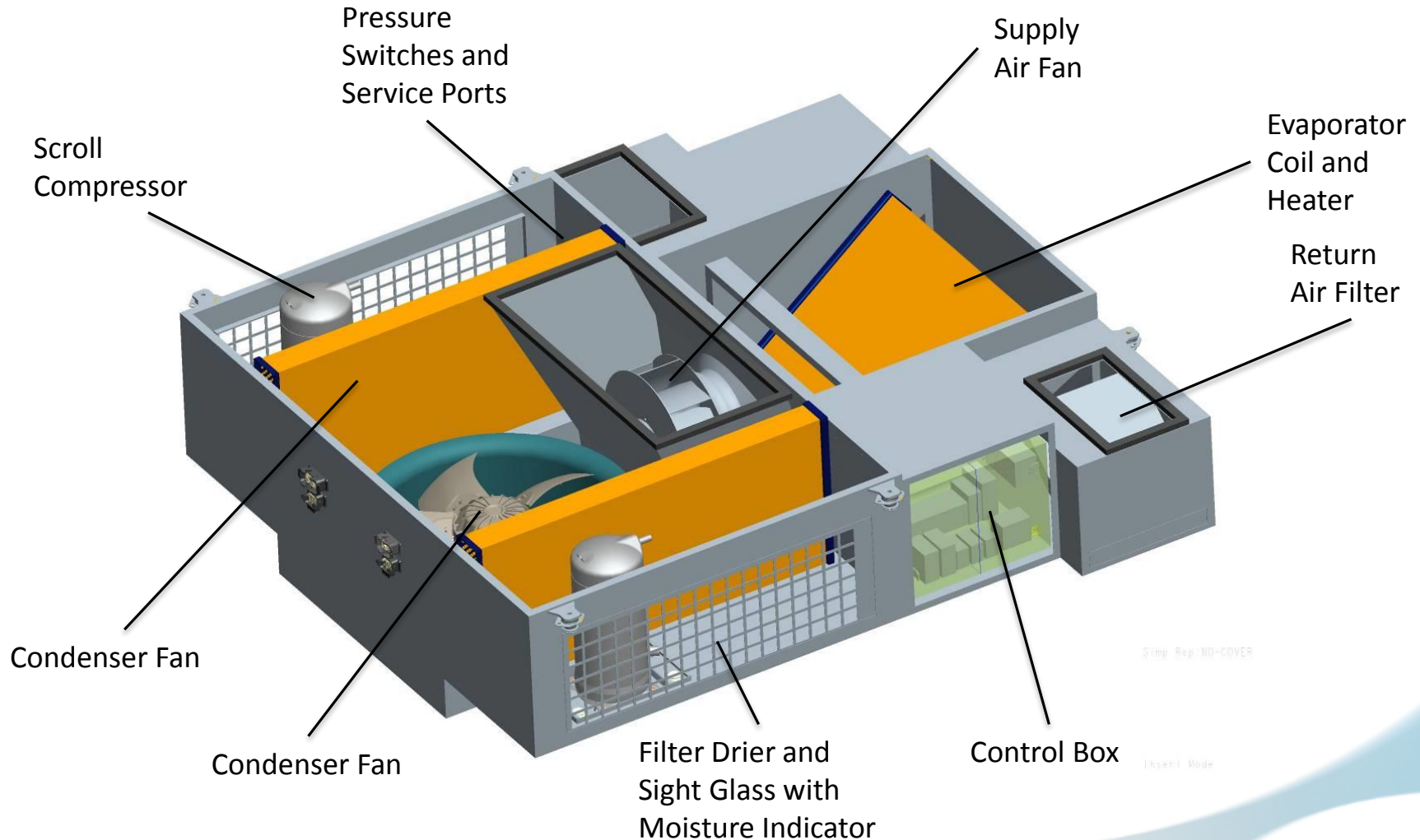


Compact Roof Mounted Unit





Compact Under Floor Unit





Unique Design Challenges

- Designing an HVAC unit to be significantly more mechanically robust to withstand the dynamic shock and vibration of the environment
- Maintaining air comfort and cleanliness with rapidly changing passenger loads and quickly changing environmental conditions (tunnels, stations)
- Maintaining reliable operation in not only dirty environments, but also harsh weather conditions (snow, ice, hail)
- Ability to continue operation when exposed to extreme transient thermal conditions in tunnels, when positioned adjacent to other heat generating equipment, and of course the sun
- High tolerance for rapid supply voltage fluctuation and frequent power interruptions
- Tight packaging of high capacity equipment in very limited space envelopes
- Sizing capacity to accommodate rapid cool down and heat up cycles when the vehicles are parked without power for extended periods of time
- Every project and customer requirements' have a significant amount of differentiating variables that make it impossible to design a “universal HVAC unit”



NA Market Challenges

- **Operator constraints / expectations**

- reliable, standardized systems, under extreme conditions
- improved quality of regulation (especially under dynamic conditions)
- reduced maintenance (filter, leakage detection, CBM) and extending of overhaul periods
- direct access to the component suppliers
- reduction of the energy consumption of the train
- environmental friendly, long term useable refrigerants

- **Car builder constraints / expectations**

- low cost units (preferably out of China if no BAA required),
- low energy consumption
- standardization (train platform oriented)
- meet the legal regulation at no additional cost
- Plug and play systems including SW
- System simulation for risk mitigation and to shorten test efforts
- Supplier has to take system responsibility



BAA Compliance

Manufacturing Localization - BAA compliance

- FTNA is highly experienced in delivering BAA compliant products with 60% minimum local content for our customers
- FTNA Project Management, Engineering, Purchasing, and Accounting develop a plan at the beginning of a project to insure compliance to 49 CFR Part 661
- Few components purchased In Europe, most purchased locally, final assembly and testing done locally in FTNA



Quality Assurance

- ISO 9001 & 14001 Certifications

- Internal Processes

QUALITY & ENVIRONMENTAL POLICY STATEMENT

The committed goal of Faiveley Transport is overall customer satisfaction, continuous improvement, pollution prevention and environmental adherence to all laws and regulations. We have a great deal of pride in our world class quality and environmental programs that meets or exceeds the expectations and needs of our customers for quality products, pollution prevention, services, on time delivery record, at a very competitive cost. The Faiveley Transport Quality/Environmental Management Systems are based upon defect prevention, continuous improvement, quality at the source and pollution prevention. The effectiveness of our Quality/Environmental Management Systems are reviewed for constant suitability and improvement by establishing, reviewing and improving on our quality and environmental objectives.

The quality of each product or service is the specific responsibility of the person who produces it.

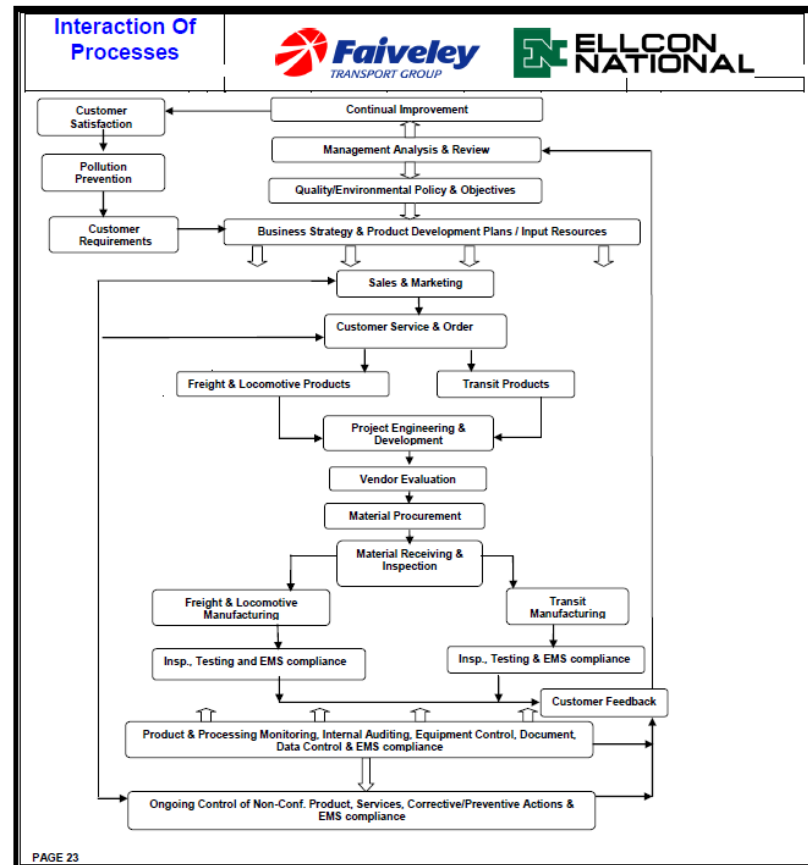
The Quality/Environmental objectives are to meet the above noted goals and requirements and improve product quality and environmental conditions.

The main scope of manufacturing for our organization is the manufacturing of railroad braking related products and rail mass transit products.

James J. Frantz
Chief Executive Officer

Ralph L. Cool
Quality Assurance Director

Lane Shuler
Environmental Health & Safety Director





For further questions please contact:

Brandon Gasiewicz (HVAC Product Manager)

Phone: + 1 864 434 2986

brandon.gasiewicz@faiveleytransport.com

**Thank you
for your attention.**





Flirt ³ **TEX**Rail
STADLER

The Stadler Rail Group

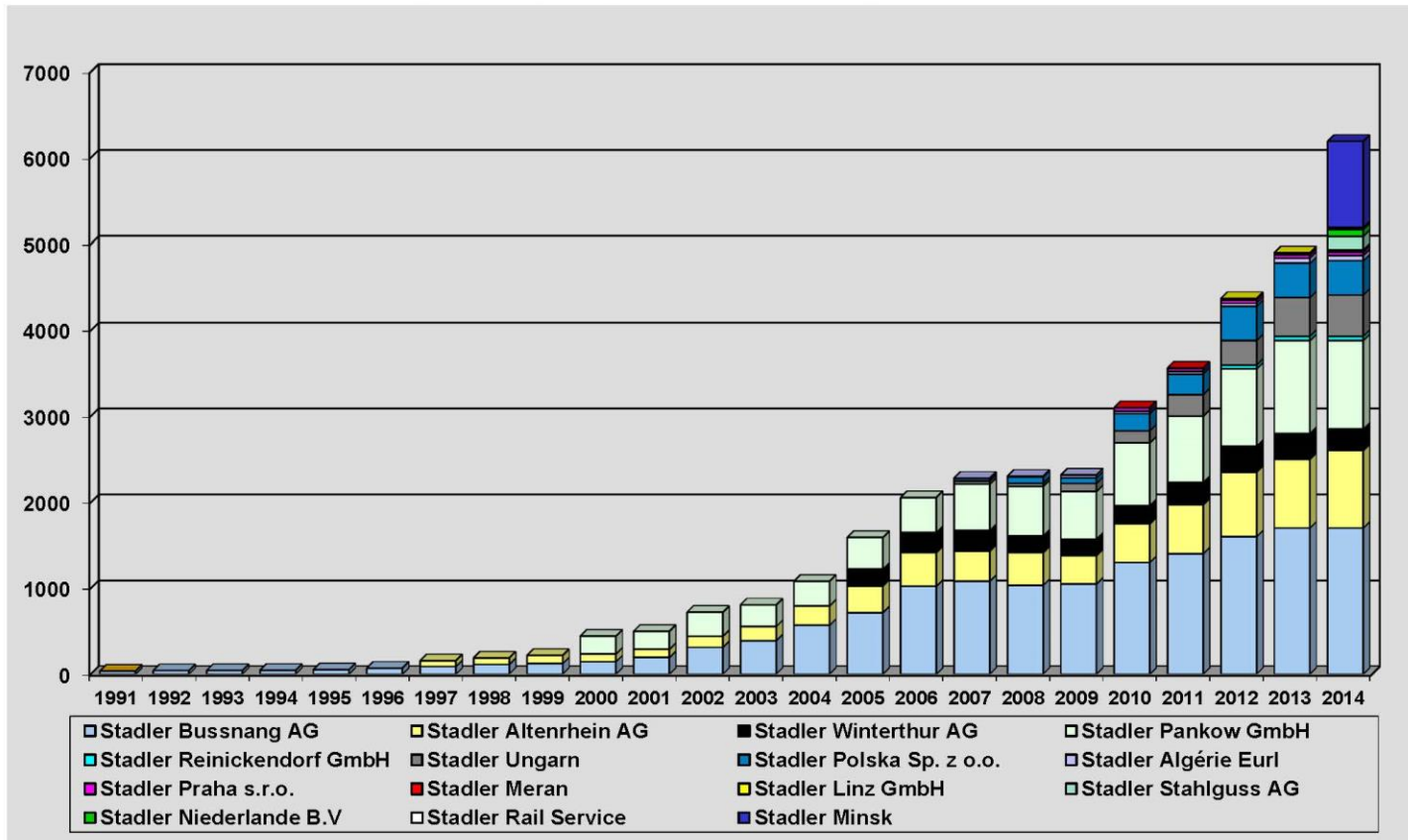
The Stadler Rail Group

The Stadler Rail Group



The Stadler Rail Group

Stadler Rail Group employee development



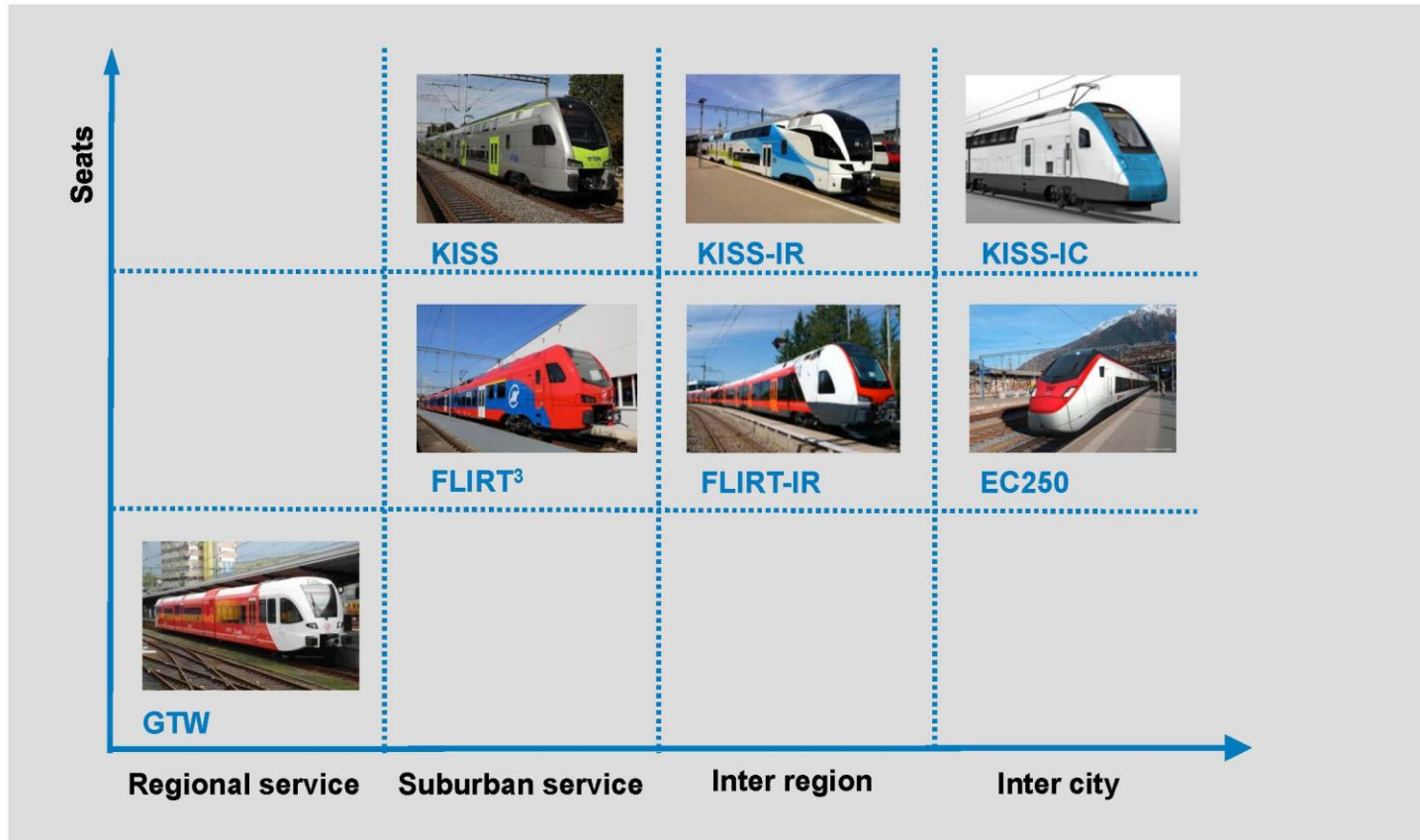
The Stadler Rail Group

Vision

Stadler Rail Group is an independent and international rail vehicle manufacturer with its main focus on Europe and development of further regions. Through our high quality and customer specific products as well as our customized services we follow a clear segment and market strategy.

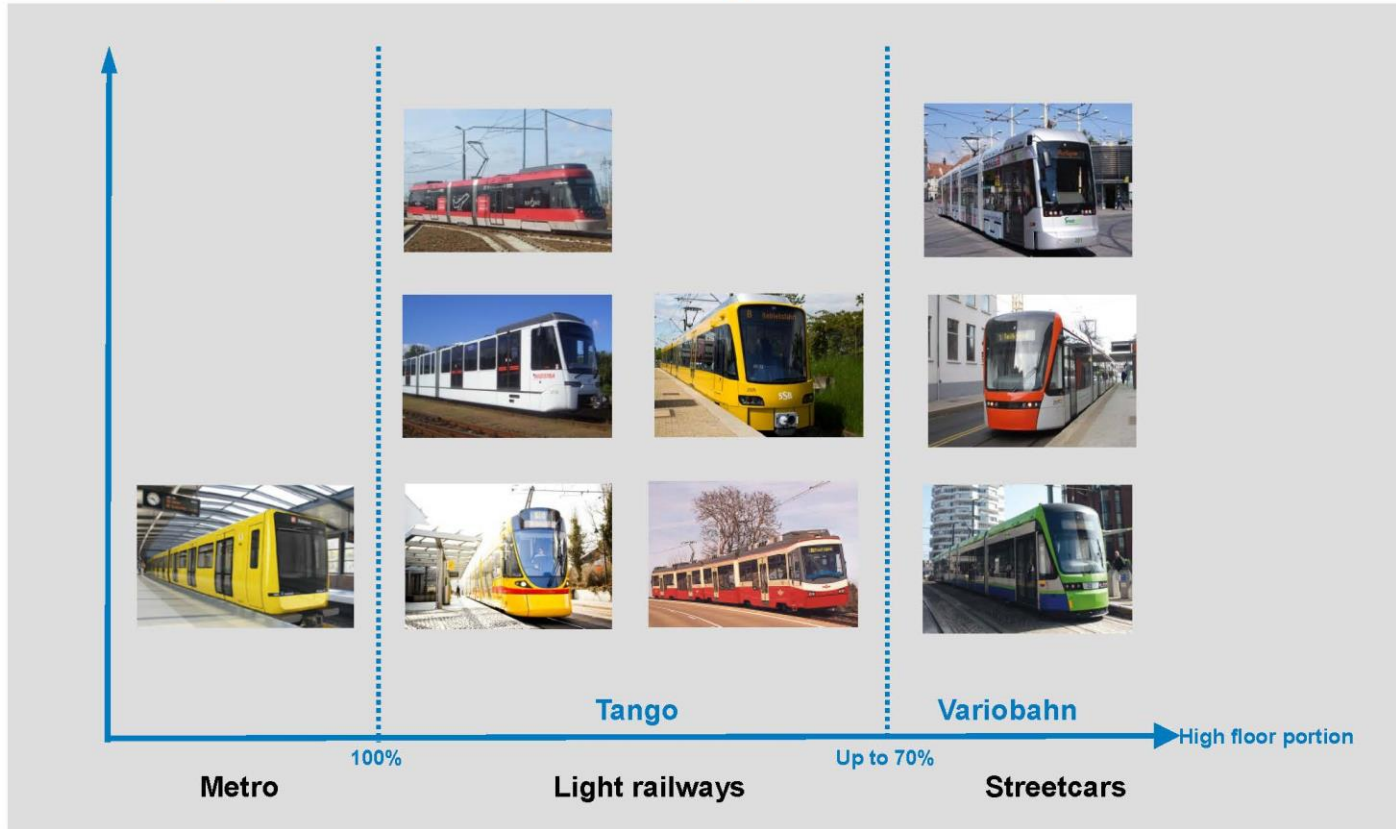
The Stadler Rail Group

Product portfolio: Railway vehicles



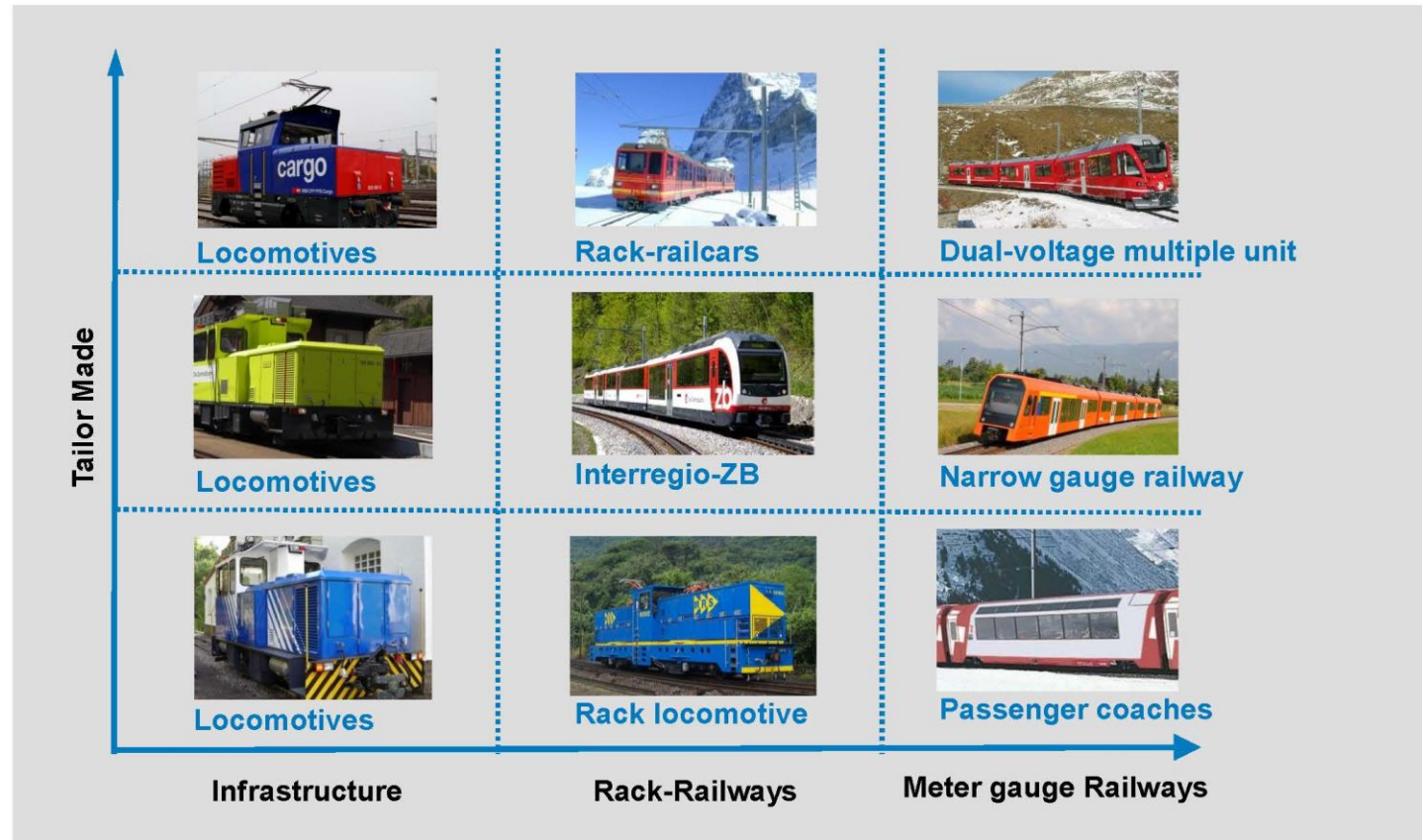
The Stadler Rail Group

Product portfolio: Urban Transport



The Stadler Rail Group

Product portfolio: Tailor made



The Stadler Rail Group

Stadler in the Unites States

- **Delivered GTW DMU's made in Switzerland to New Jersey in 2002, Austin in 2007, and Denton County in 2011**
- **Currently building GTW DMU's in Switzerland to be delivered to Oakland in 2016 and Austin in 2017**
- **Stadler signed the first FLIRT 3 DMU contract in the USA for Ft. Worth in June of 2015**
 - **It is Stadler's first Buy America contract**
 - **Until now, Stadler US Inc. was primarily a sales office**
 - **Stadler is currently evaluating different sites in the US for a final assembly line**
 - **Stadler is now establishing a supplier network in the US**

The Stadler Rail Group

TexRail requirements

- **Service proven design and experienced**
- **Aggressive schedule**
 - **Contract signed in June 2015**
 - **Vehicle delivery starting in August 2017**
- **Reliability (RAMS)**
- **Low life cycle cost (LCC)**
- **Extended warranty**

The Stadler Rail Group

Stadler Requirements

- **Meet all quality standards set by the customer**
- **Meet the quality standards as if the train was built in Switzerland**
- **On-time delivery performance**
- **Certifications to verify technical compliance such as NFPA 130**

The Stadler Rail Group

Stadler US

- Contactors and electrical equipment
- Decals meeting 49 CFR 239
- Florescent light bulbs
- Metric fasteners
- Hand tools
- Consumables
- Glazing meeting 49 CFR 223
- Office equipment
- Temporary housing hotels, corporate relocation etc.
- Interior linings, Seating
- Roof shrouds
- Metal fabrication (aluminum, stainless, steel)
- Hydraulics and pneumatics fittings and hoses (metric)
- Air ducts
- Wire & cable meeting NFPA 130
- Stainless steel stanchions
- Tamper proof locks
- Rubber flooring meeting NFPA 130

The Stadler Rail Group

Stadler Contact

- Email: dbe.usa@stadlerrail.com
- List of Materials and services you can supply
- Previous Rail experience
- Service proven design
- Drawings and technical description
- Contact person for pricing and availability

**Thank you
for your attention.**





Wabtec[®]
CORPORATION

Wabtec Corporation Overview



Wabtec supplies engineered systems and services to rail and industrial markets.

- Founded in 1869 by George Westinghouse
- Headquarters in Wilmerding, PA
- 13,000 employees
- 2014 sales of \$3 billion
- Manufacturing sites in 24 countries
- NYSE symbol WAB



Our mission is to help our customers increase safety, efficiency and productivity.



Wabtec Values

Working Together

If someday they say of me that in my work I have contributed something to the welfare and happiness of my fellow man, I will be satisfied.

George Westinghouse



Safety



**Customer
Focus**



**Continuous
Improvement**

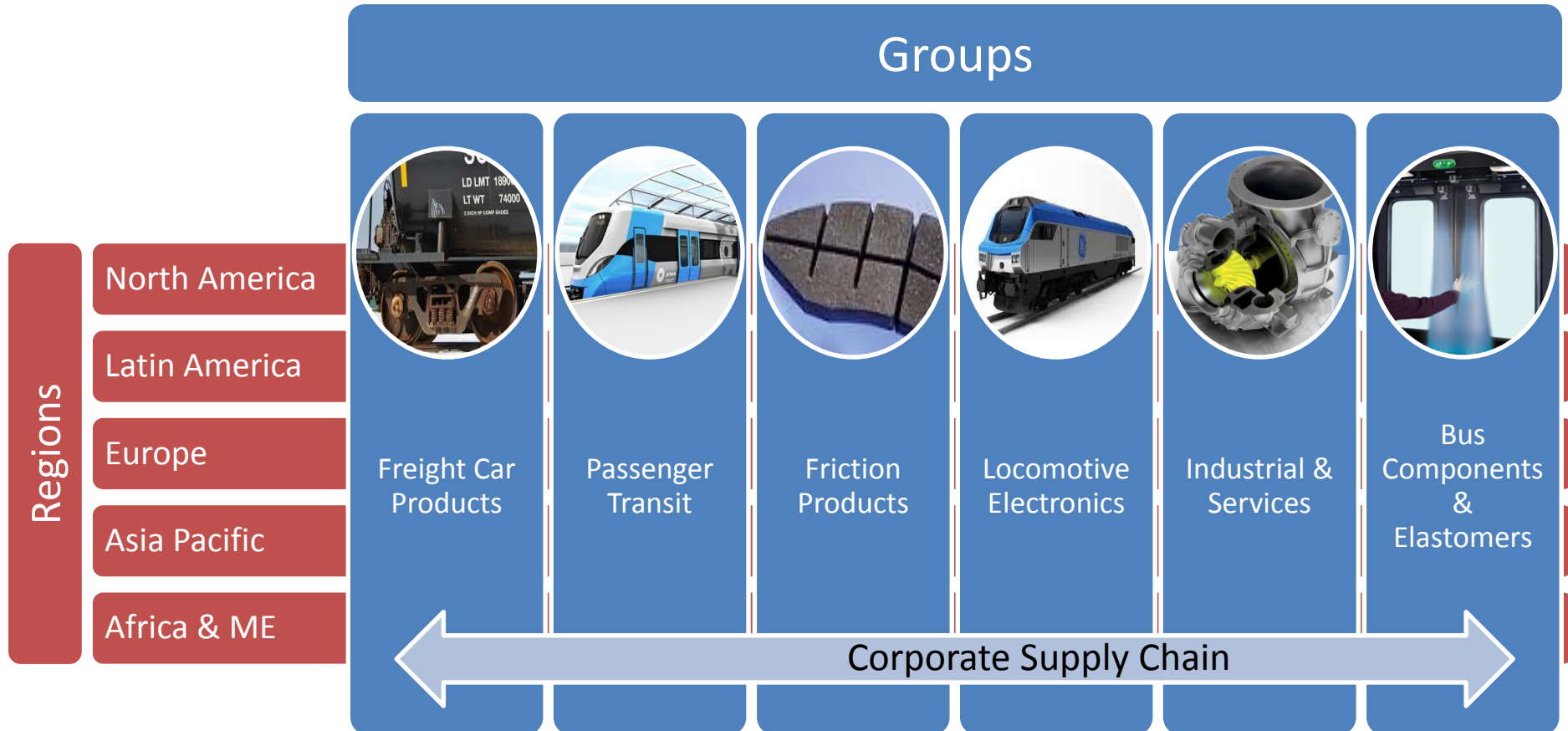


Teamwork



Leadership

Company Structure



Global Footprint



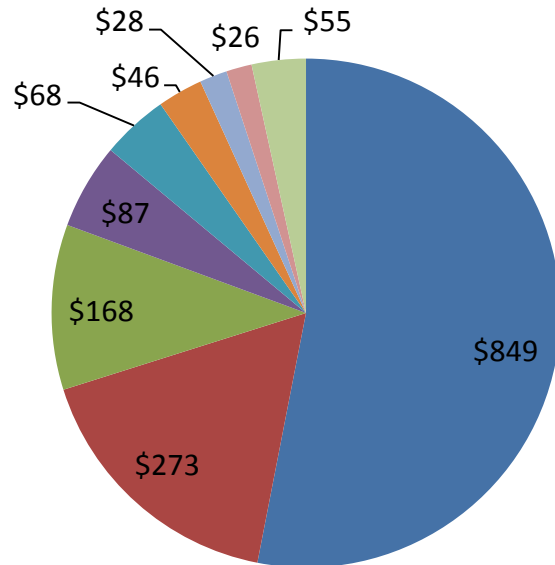
Spend Profile

2015 Spend Estimate = \$1.6 billion



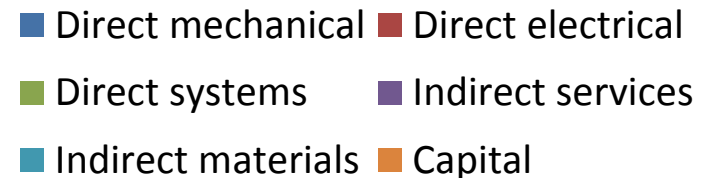
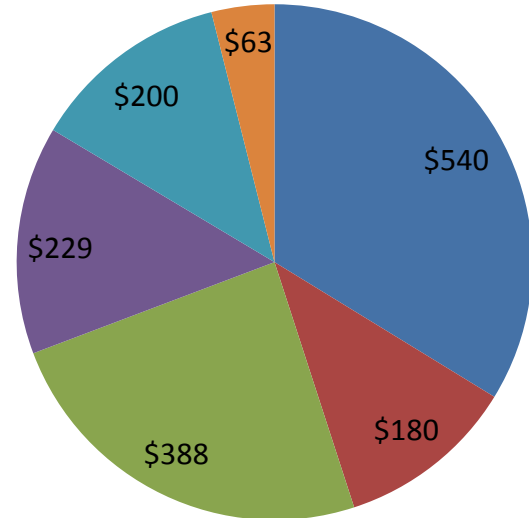
Spend by Country

millions

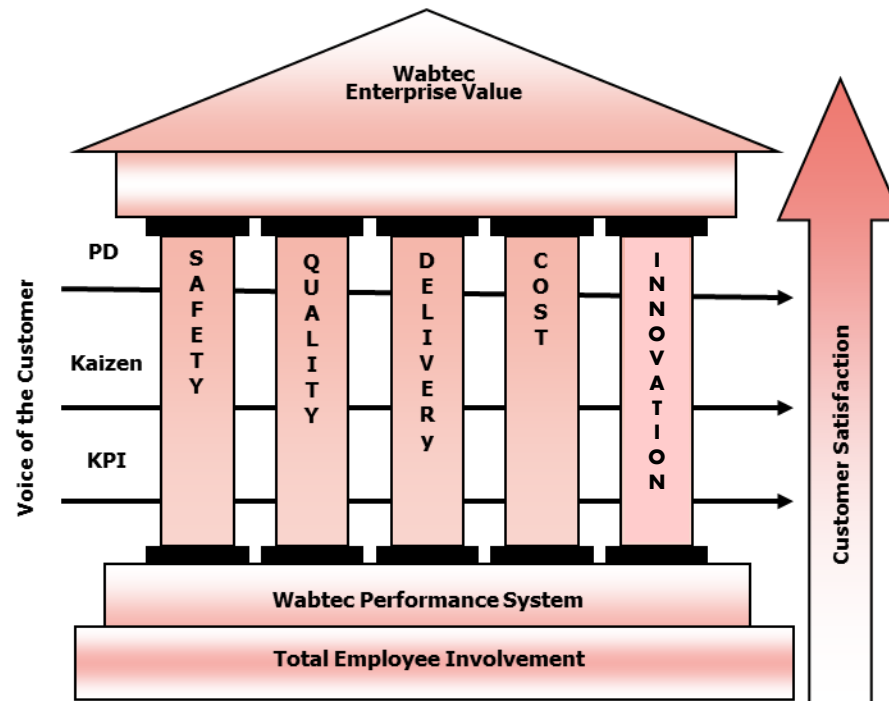


Spend By Category

millions



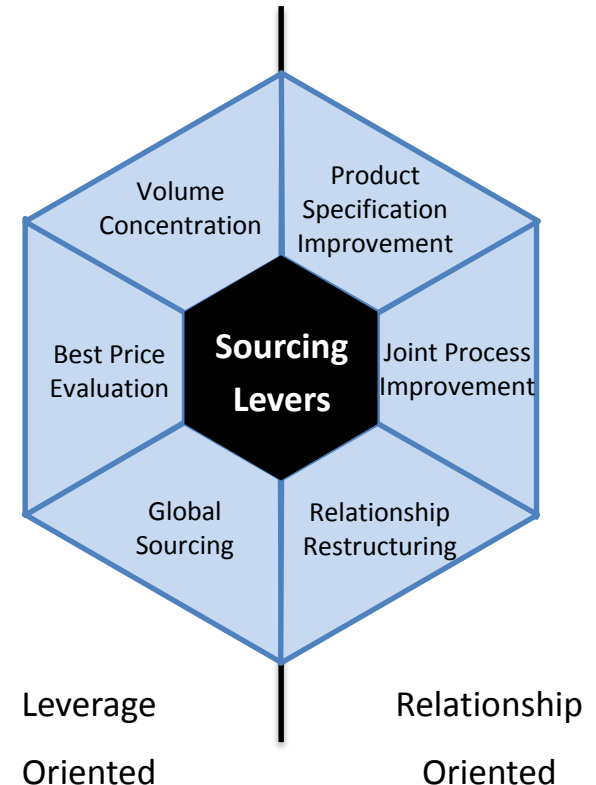
Wabtec Performance System



Sourcing Productivity Plan



- Category Management
 - Global spend analysis and profile
 - Understand the needs of the business
 - Understand the global marketplace
- Strategic Sourcing
 - Cross-functional sourcing teams
 - Supply base consolidation
 - Long term supply agreements
- Supplier Relationship Management
 - Innovation and design collaboration
 - WPS tools for process improvement
 - Quarterly Business Reviews



Supplier Relationship Tools



- Supplier Portal (<http://wabtec.livesource.com>)
 - Efficient 2-way communications (RFI, RFP, etc.)
 - Visible to all Wabtec buyers
 - Suppliers maintain their own online profile
 - No cost to suppliers
- Scorecards, assessments and process audits
- Corporate Preferred Supplier Program
- Master Supply Agreement
- Quarterly business review meetings (QBR)
- Rapid Replenishment Program
- Citi Supplier Finance Program

Preferred Supplier Program



- Requirements
 - Signed Master Supply Agreement
 - Commitment to Wabtec Performance System targets
- Benefits of being a preferred supplier to Wabtec
 - Preferred access to all business units
 - The chance to bid on and win new business based on lowest total cost of ownership
 - Collaboration
 - Early design involvement
 - Replenishment program
 - Quarterly business reviews
 - Long term partnership



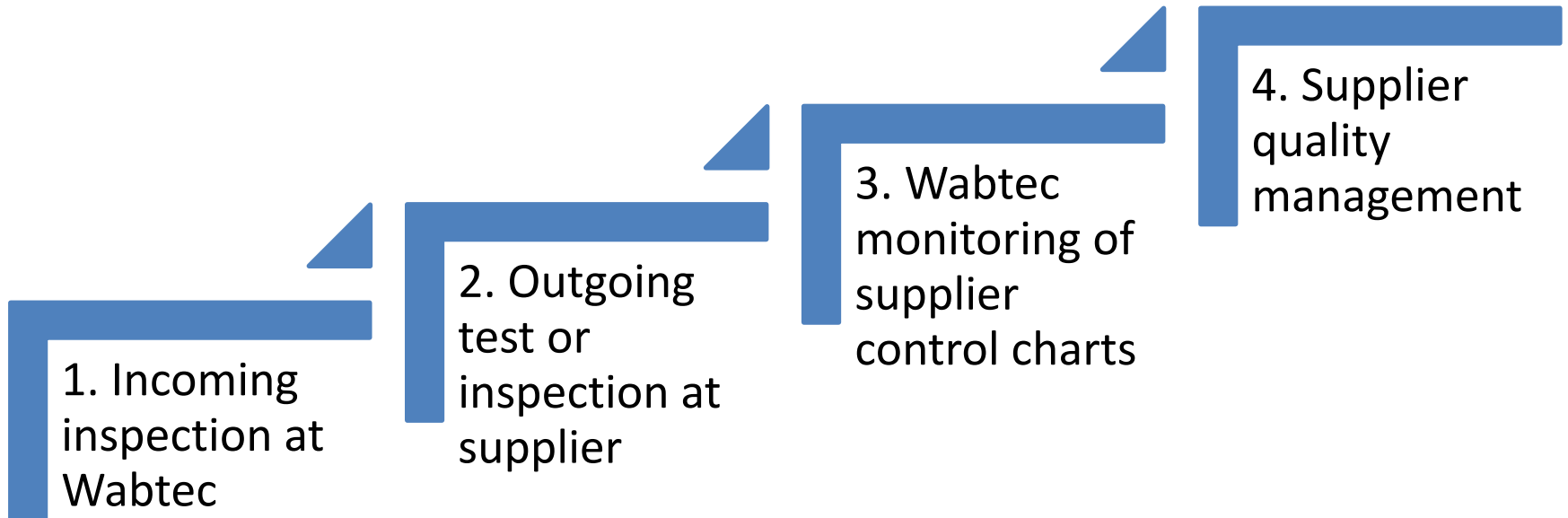
Preferred Supplier Program



Pillars	Targets	Tools
Safety	<ul style="list-style-type: none">• Safe products• A safe workplace	<ul style="list-style-type: none">• Health and safety audits• Certifications (ISO, IRIS)
Quality	<ul style="list-style-type: none">• COPQ < 0.5% of spend• Audit score > 70	<ul style="list-style-type: none">• Supplier audits and scorecards• Statistical process control
Delivery	<ul style="list-style-type: none">• < 14 days lead time• 99% on time	<ul style="list-style-type: none">• Rapid Replenishment Program• Kanban
Cost	<ul style="list-style-type: none">• Signed Master Supply Agreement• 5% annual productivity	<ul style="list-style-type: none">• eSourcing Supplier Portal• WPS tools (VA/VE, VSM, Kaizen)• Joint process improvement
Innovation	<ul style="list-style-type: none">• Innovation teamwork• Exclusive IP	<ul style="list-style-type: none">• Value analysis/value engineering• NDA and IP covered in MSA

Goal: partner with our most important suppliers for mutual benefit.

Phases of Quality



Prerequisites

- Clearly defined specifications
- Quality control plans in place
- Stable and capable process
- COPQ feedback from Wabtec

Rapid Replenishment Process and Roles

	Wabtec	Supplier
• Agree on replenishment rules		
• Send forecast weekly		
• Place 2 weeks firm orders		
• Acknowledge orders and safety stock status		
• Plan and buy raw materials		
• Produce to forecast based on min/max rules		
• Deliver on promise date		
• Quarterly performance review meeting		
• Control plans and SPC		
• Continuous process improvement		

Rapid Replenishment Benefits



Supplier

- Flexible manufacturing
- Larger production runs
- Guaranteed minimum quantity
- Lower transaction costs
- Closer partnership
- Forecast visibility

Wabtec

- More flexibility
- Shorter lead times
- Better customer delivery
- Fewer missed sales opportunities
- Lower transaction costs
- Less inventory

Lower costs, higher sales and a more profitable partnership

What do we need?



- Supplier driven innovation
 - Differentiated, protectable technology
 - Willingness and ability to collaborate
 - Create competitive advantage
- Certified DBE suppliers
- Strategic outsourcing partners
 - Able to invest for growth
 - Willing to take shared risks

Thank you.

Agenda

8:00am	Registration/Continental Breakfast
8:30am	Welcome Remarks and Forum Introduction
9:00am	U.S. DOT Keynote and Buy America Overview
9:40am	Q&A
10:00am	Break
10:15am	OEM Panel: Supply Chain Opportunities and Needs
11:00am	Q&A
11:15am	Supplier Panel: The View from Prospective Suppliers
11:45am	Q&A
12:00pm	LUNCH
12:50pm	MEP Assistance Opportunities and Available Resources
1:30pm	Q&A
1:40pm	Open Discussion: Transit Supply Issues and Opportunities
1:50pm	Intro to One-on-One Meetings among OEMs and Suppliers
2:00pm	Transition to One-on-One Meetings among OEMs and Suppliers
2:10pm	Networking Reception Concurrent with One-on-One Meetings
5:00pm	Adjourn





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5:00pm	Adjourn



Supplier Panel - The View from Prospective Transit Suppliers





ABB Traction Business for Railway in North America

General introduction

ABB in railways

Independent component supplier

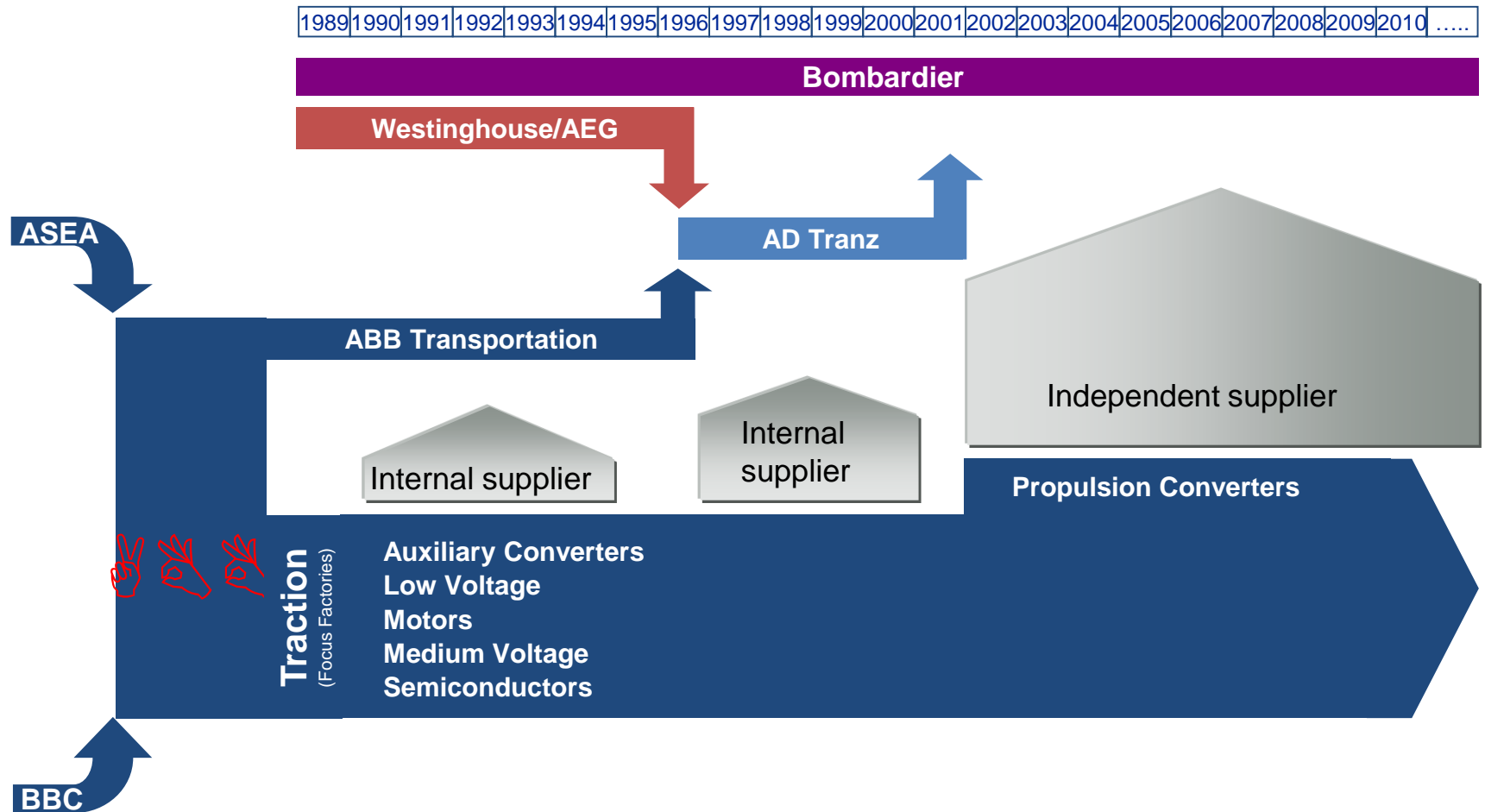


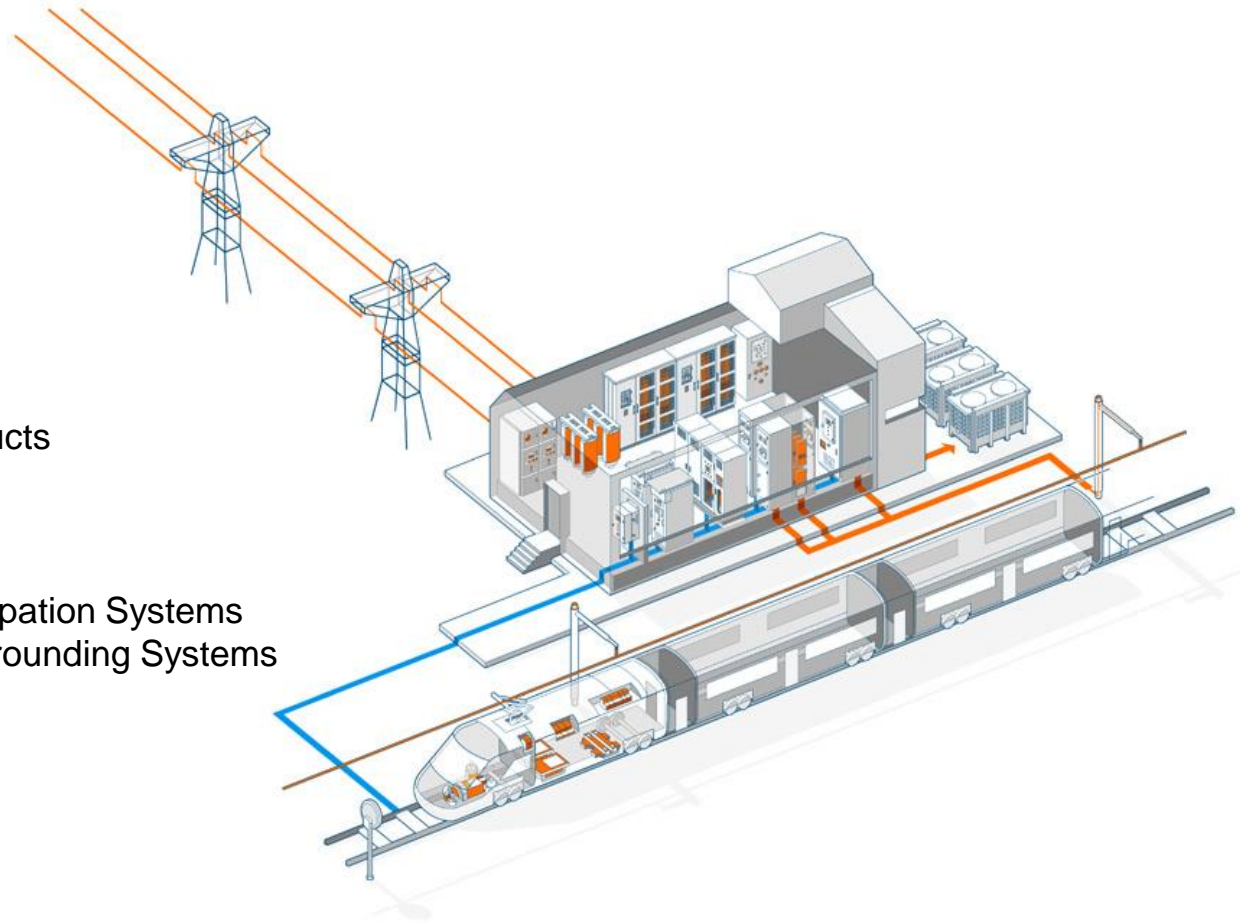
ABB Product & Solution Portfolio in Rail

Rolling Stock

- Traction Converters
- Traction Motors/Generators
- Traction Transformers
- Auxiliary Power Converters
- Low Voltage Components

Traction Power Substation

- AC High & Medium Voltage Products
- Rectifier Transformers
- Rectifiers
- DC Switchgears
- Energy Storage, Recovery & Dissipation Systems
- Platform Bounding & Automatic Grounding Systems



Powering Your Transportation Needs With Energy Efficient Solutions



ABB Rolling Stock Product Line

Advanced technologies for rolling stock applications

Key power components



**Traction
Transformers**

- Single to multiphase systems (AC only, AC/DC, diesel/AC, 16.7 Hz, 25 Hz, 50 Hz, 60 Hz)



**Traction
Converters**

- AC grid voltage applications (15 kV / 16.7Hz or 25 kV / 50Hz)
- DC grid voltage applications (600/750V_{DC}, 1.5 kV_{DC}, 3kV_{DC})
- Diesel generator applications
- Multi-system and hybrid applications



**Motors
and Generators**

- Modular traction motors
 - LRV to HST range
 - 30-900 kW
 - Induction
- Frameless traction motors
 - Locomotive and VHST range
 - 600-1800 kW
 - Induction
- Gearbox and coupling



**Auxiliary
Converters**

- Auxiliary Converters and Battery Chargers for all kind of in- and output voltages in AC and DC applications
- Output power range between 1 and 1'200 kW
- Roof, under floor or machine room mounting possible
- Air-cooled and completely sealed

All products with cross-industry synergies, optimized and adapted for railway application

ABB traction converters for all types of rail vehicles

BORDLINE® CC series

BORDLINE® CC series

CC400
for Light Rail Vehicles,
Metros, People Movers

CC750
for mass transit EMUs,
DMUs, Mountain Trains,
Metros

CC1500
for Locomotives and
High-Power EMUs



CC400



CC750



CC1500

- Modular technology platform for fast project delivery, economies of scale, maintainability, and optimum life-cycle cost
- Very compact, reliable, and energy-efficient

Modular auxiliary converters and battery chargers BORDLINE® M series

BORDLINE® M series

Battery Charger
for locomotive

M45 AC
for coaches

M45 MS
for border-crossing
sleeping coaches

M1200 AC
for locomotives



Battery Charger

M45 AC

M45 MS

M1200 AC

- Output power range from 1 to 1'200 kW, individually controlled
- AC & DC and multi-system input voltages
- Galvanic separation; optional integrated battery charger
- Compact, rugged, reliable, and low noise
- Large variety of cabinets and protection levels



Manufacturing Facilities & Centers of Excellence

© ABB Group
June 30, 2015



Richmond, VA - US Headquarters for Traction Group

- Operations, Engineering and Project Management

Power Solutions, Facility Details

Building:

- Manufacturing floor area:	48,000 sqFt
- Testing area (Included in Manufacturing):	4,700 sqFt
After Expansion Project:	6,200 sqFt
- Office area :	27,000 sqFt
- Warehouse :	18,000 sqFt
- Quality Lab/Training area:	2,500 sqFt
- Total area:	95,500 sqFt
- Standard loading docks	
Receiving Area	3
Shipping Area	3
Other Available Doors (one with Ramp)	3
- Available Power:	2 @ 1.5 MW

Workforce :

- Assembler:	33
- Quality Tech/Lab:	8
- Logistics/Warehouse:	11
- Test Engineer:	9
- MFG Supervisor:	3
- Order/Sustaining Engineering:	7
- Power R&D Engineering:	8

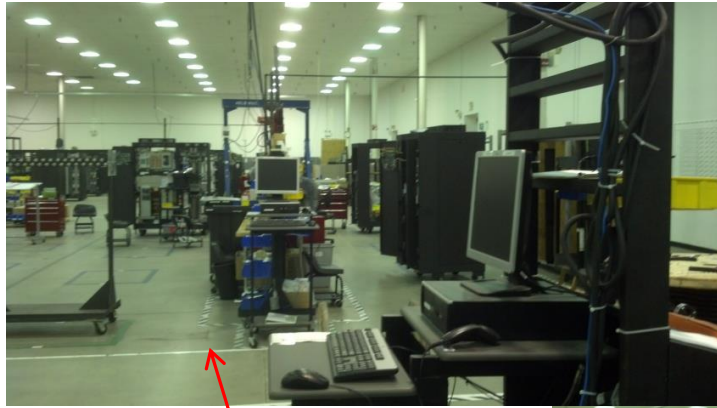


Power Solutions
5900 Eastport Blvd
Richmond, VA 23231



June 30, 2015

Power Solutions – Production Floor Photos



Manufacturing



Test Bay
(one of three)



Harness Assy



Location, Phoenix Arizona



Produced by the Dept. of Geography
The University of Alabama

Manufacturing capacity

Building:

-Year of construction:	1996	
-Shop floor area:	50,000	sqFt(*)
(*) 50% unused		
-Testing area (Included in shop floor sq footage):	20,000	sqFt
-Office surface:	40,000	sqFt
-Other:	12,000	sqFt
-Total area:	102,000	sqFt
-Regular loading docks	11	
-Available Power:	1500	k W

Workforce :

-Assembler:	48
-Tester/QA:	9
-Production Engineer:	3
-Test Engineer:	5
-MFG Supervisor:	2
-Buyer:	2



PRODUCTION AREA

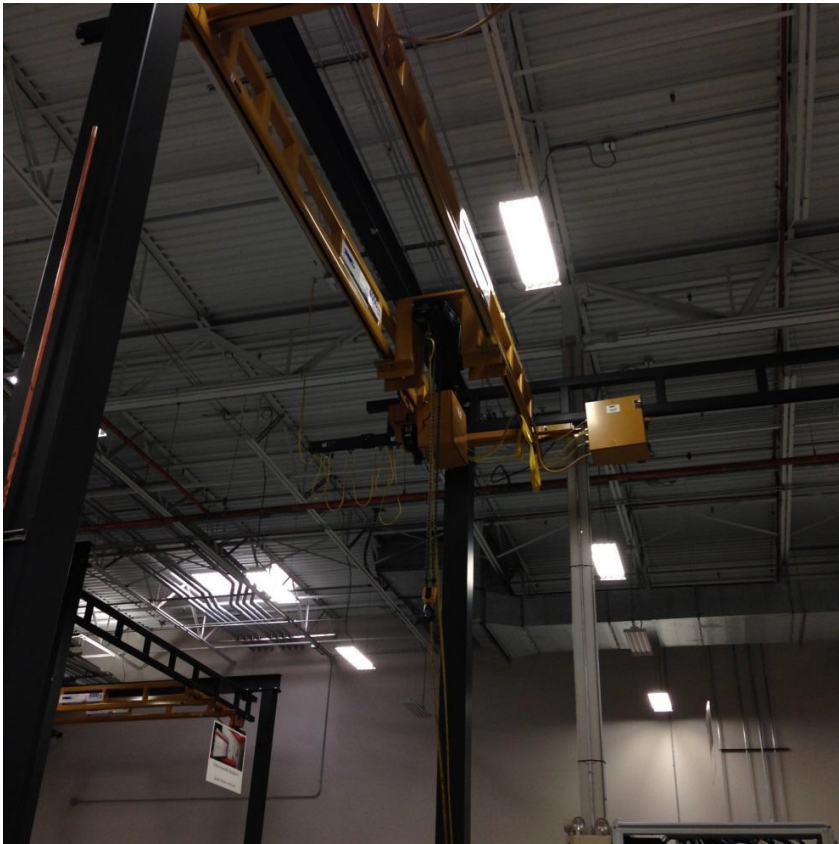
Sub-assembly station





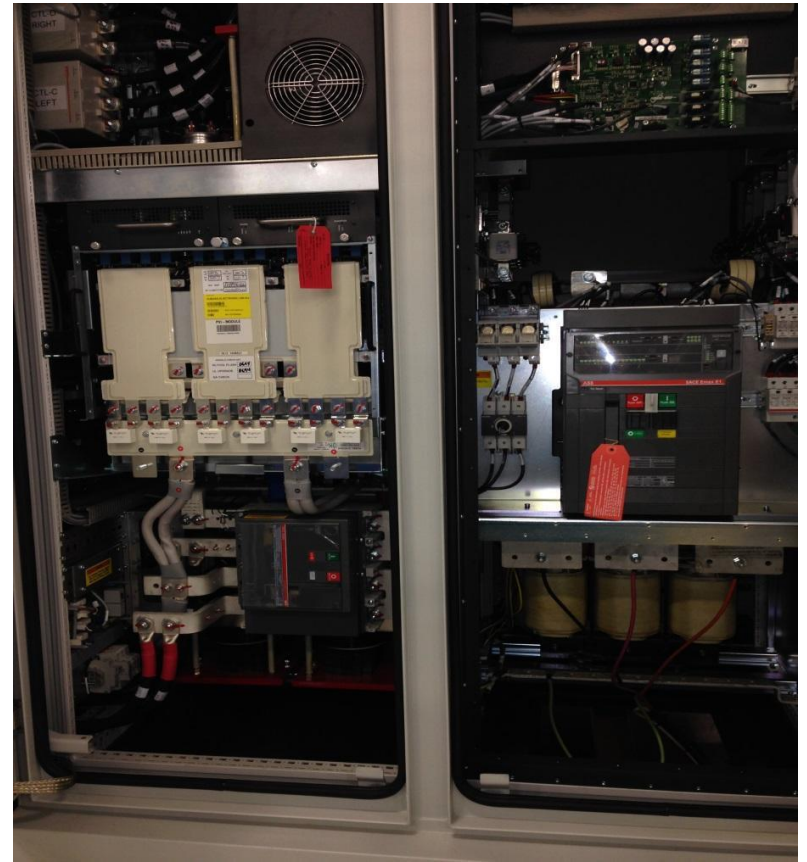
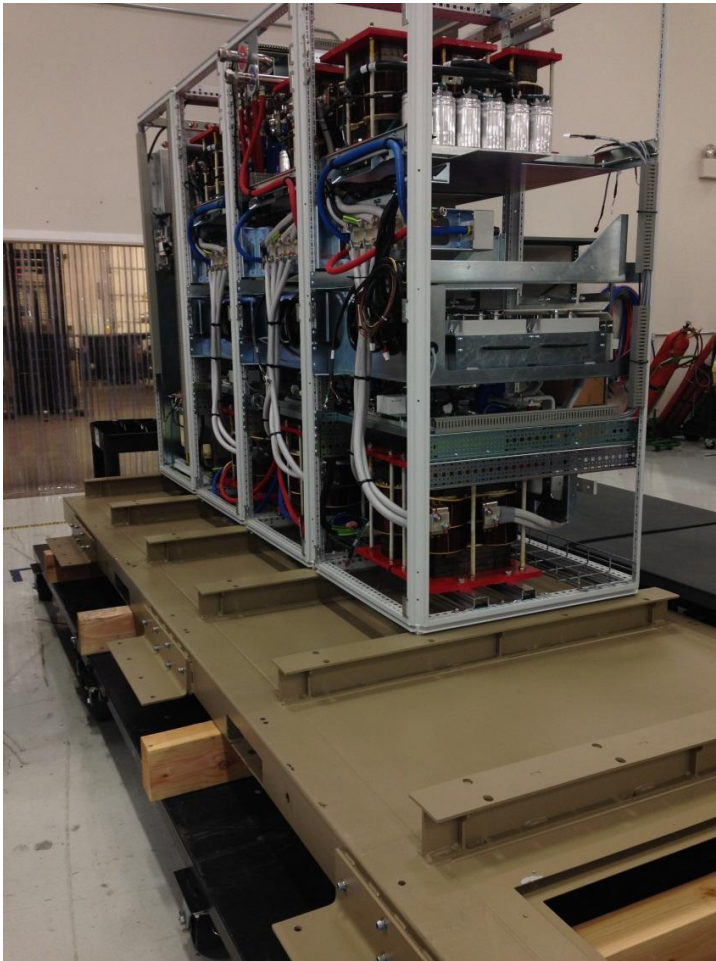
TEST AREA





HANDLING EQUIPMENT





MANUFACTURED PRODUCTS

ABB New Berlin, US Service & Repair Center



- **Discrete Automation & Motion (DM) in North America, New Berlin, WI**

- ABB North America HQ for: LV- & MV-Drives, LV- & MV Motors, LV-Products, Power Conversion
- Shipping 100,000 LV-Drives drives per year
- ISO 9001, ISO 14001, ISO 18001 Facility
- ~650 Employees
- total manufacturing space 70,000 square feet

Manufacturing and test facilities



Fig. ABB / Baldor Athens, GA plant



Fig. Installed class 200 VPI plant



Fig. Back to back testing

ABB in North America

Acquired Baldor in 2011 adding 7,500 people to ABB's organization in North America

Specialized in Industrial motors, special navy motors, mining and nuclear motors

Production transfer initiated from ABB Sweden to ABB North America

Based on well proven production transfer process (executed in China, Estonia and India for Traction Motors)

VPI plant (class 200 insulation system) already in place

Challenges in Meeting Domestic Content and Buy America Requirements

- Defining what is a subcomponent (i.e. PCB, IGBT, power supply, etc.) which can be an off-shore item which makes part of our product building block vs. a locally sourced subcomponent which helps to determine the > 60% domestic content
- Strategically determining which US manufacturing facility should manufacture ABB's traction systems for railway rolling stock, what are the criteria (i.e. should multiple facilities be maintained):
 - Geographic location
 - Production capacity
 - Technical local knowhow / capability
- Building local products based on North American Standards
 - EN55015 vs. NFPA130 (smoke & toxicity)
 - EN15085 vs. AWS (welding)
 - EN50121-2 vs. UMTA-MA-06-153-xx (EMI / EMC)
 - Etc.

Power and productivity
for a better world™



Rail Forum Salt Lake City, June 24 2015



Kristian “Kris” Sjöström
VP Operations

Doppelmayr USA, Inc.
3160 West 500 South
Salt Lake City, UT 84104-4443, USA
Tel 801.973.7977
Cell 801.557.2745
kristian.sjostrom@doppelmayrusa.com

Globally, who is Doppelmayr?

The Doppelmayr (Austria) + Garaventa (Switzerland) Group

- A quality, technology and market leader in ropeway engineering
- Doppelmayr/Garaventa operates production plants as well as sales and service centers in over 35 countries worldwide
- To date, the Group has built more than 14,500 installations for customers in over 88 nations
- Flexibility, know-how and pioneering spirit make the Group ideally equipped to meet all the challenges of traditional and new markets
- Innovative transport systems from Doppelmayr/Garaventa continually set new standards for Winter & Summer tourism as well as urban transit and materials transport.
- Top comfort and safety define our installations
- With Doppelmayr/Garaventa, customers get top quality in modern design, user-friendly solutions and optimum service. From the initial idea to the completed project and beyond.

Locally, who is Doppelmayr USA?

- Doppelmayr USA is a Sales, Engineering, Fabrication, Installation, and Customer Support organization developing and supporting ropeway transportation across North America
- Additionally, this Salt Lake City facility is home to Parts, Purchasing, Accounting, and Human Resource departments
- Outside of Salt Lake City, we maintain Customer Support / Installation / Sales offices & staff in Colorado, California, New Hampshire, New York, and West Virginia
- With support & equipment from colleagues in Canada and Europe we build and install surface lifts (platters/t-bars), fixed-grip chairlifts (2,3,4 person), detachable chairlifts (3,4,6 person), combination lifts of chairs + gondolas, gondolas, funiculars, trams (and DCC (Oakland/BART))




CANYONS™
PARK CITY, UTAH





 snowbasin




Steamboat.





ST REGIS
DEER CREST









Łukasz Górecki © 2008

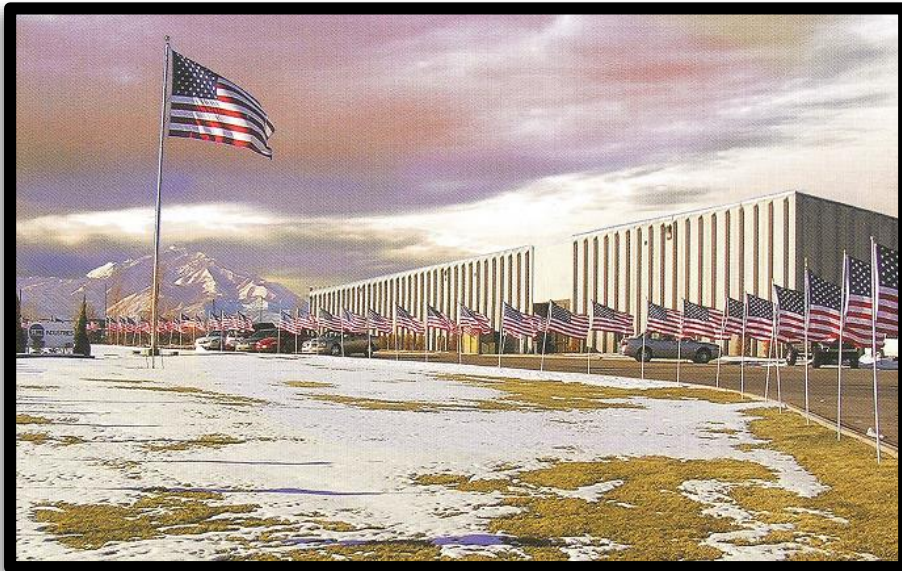


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kristian.sjostrom@doppelmayrusa.com



Klune Manufacturing Facility
Size 260,000 sq. ft.



Klune Industries, Spanish Fork Utah
is a **vertically integrated, lean manufacturer**
in Aerospace and Defense.



Fluid Thinking. Solid Solutions
A PCC Company

Building 2

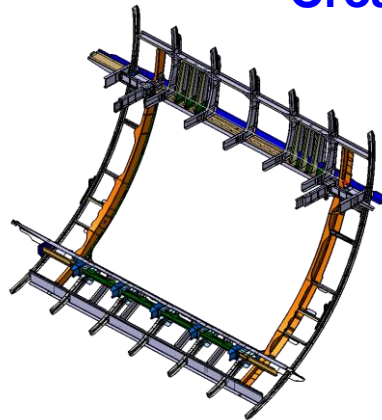


Creator of Integrated Aerospace Assemblies

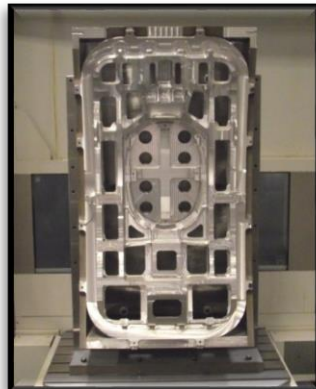
Quality Products



Flight Critical Components



Aircraft Structures



Aircraft Doors



Aeronautics



Missile Systems



Customers

Commercial

Drives 64% of our business

- Gulfstream
- Boeing
- PAG
- Alenia
- UTC
- Bombardier
- Honeywell

Military

Drives 36% of our business

- Lockheed
- Raytheon
- Boeing
- US Navy

Core Competencies

Machining

- ☐ 5 AXIS Tight Tolerance
- ☐ Hard Metals
- ☐ Castings
- ☐ Forgings
- ☐ Aluminum

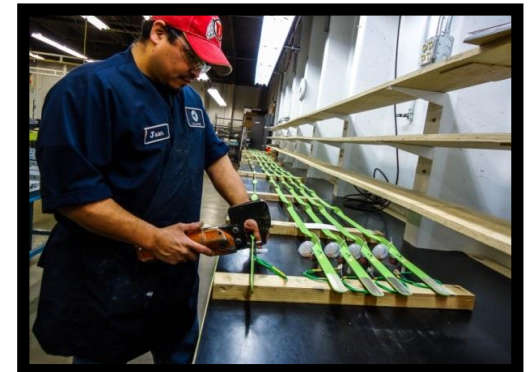
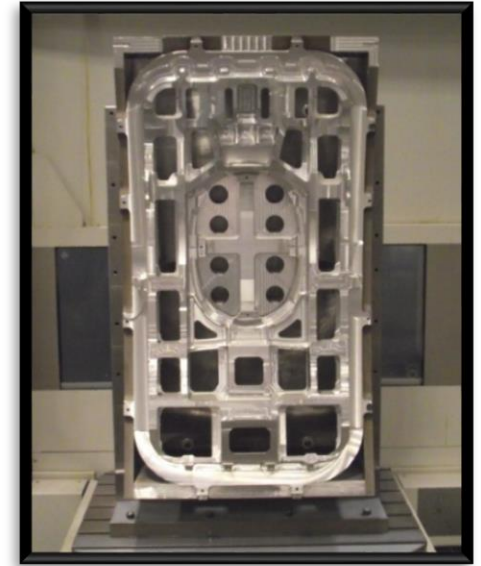
Assembly Processing

Paint

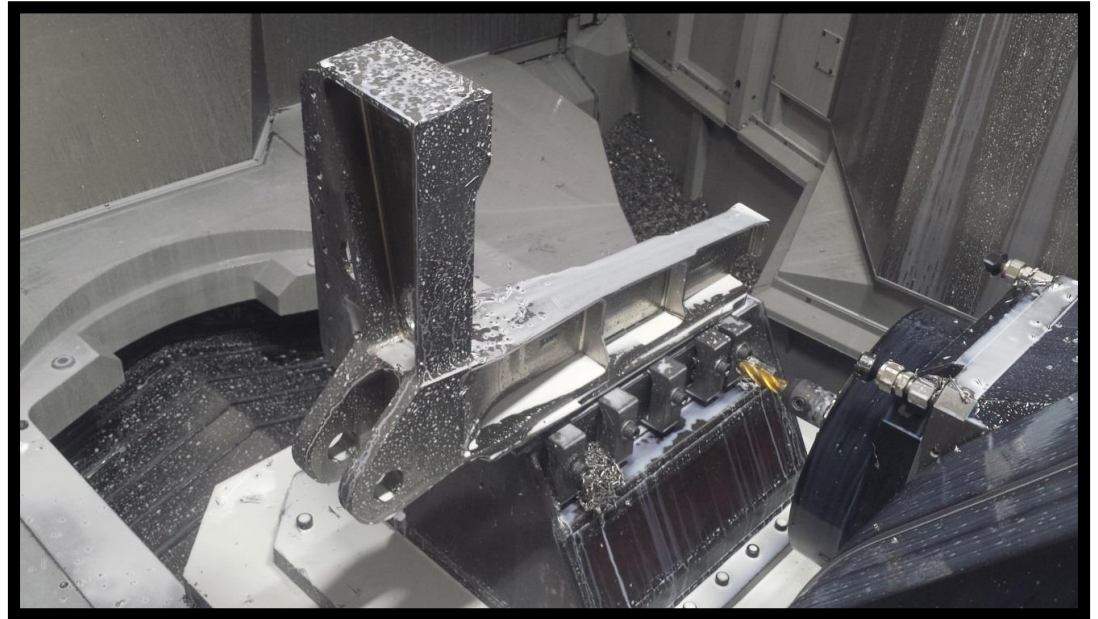
Heat treat

NDT

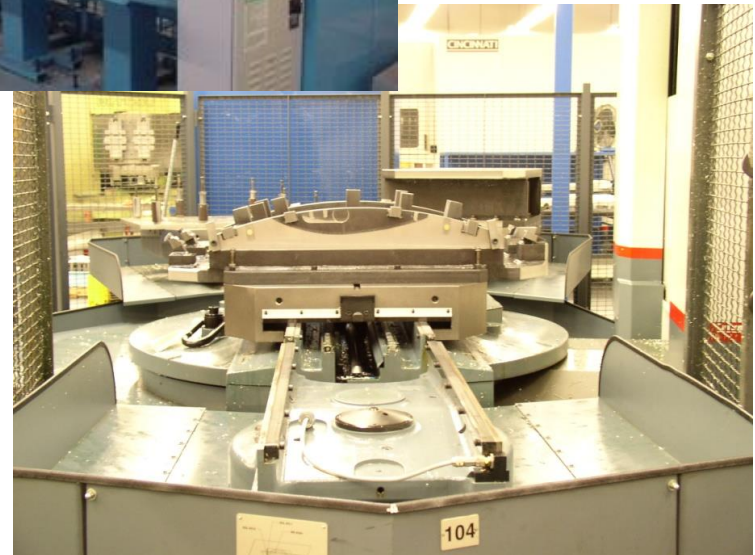
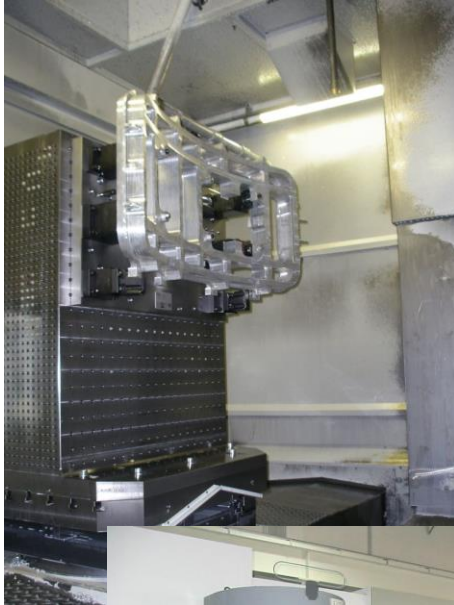
RTM Composites



Large Complex Hard Metal Machining



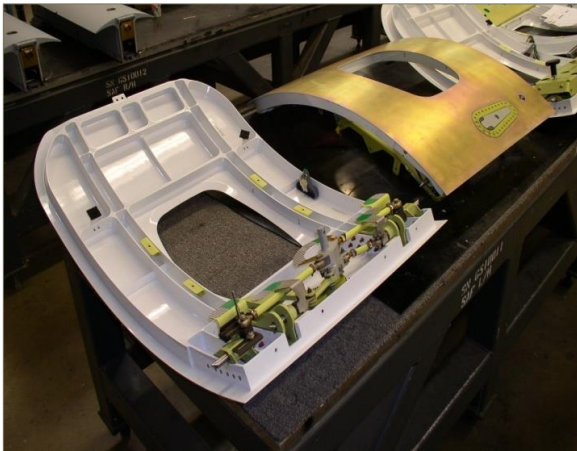
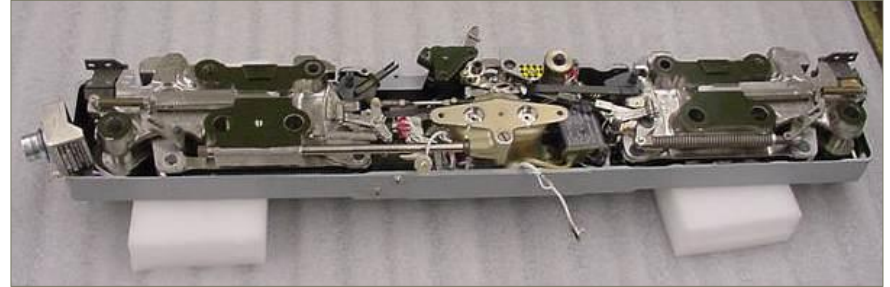
General Metal Machining



Chemical Processing



Integrated Assembly & Composites



Quality



- AS9100C / ISO 9001:2008 Certified
- NADCAP Certified for NDT, Heat Treat, & Chemical Processing

New Capital



(3) Makino T1 (5 Axis)



(3) Okuma MA-600HII (4 Axis)



Starrag STC 1000 (5 Axis)

Capacity

				Capacity in Hours/Quarter		
Plant	Machine Type	Work Envelope	Material	Total Capacity	Utilized Capacity	Open Capacity
Klune S.F.	3 - Axis	< 40"	Soft Metals	2,938.0	1,040.0	827.6
Klune S.F.	3 - Axis	61" - 120"	Soft Metals	1,496.0	1,170.0	(709.8)
Klune S.F.	4 - Axis	< 40"	Soft Metals	11,750.0	10,530.0	3,585.0
Klune S.F.	5 - Axis	< 40"	Soft Metals	1,496.0	520.0	(204.9)
Klune S.F.	5 - Axis	41" - 60"	Soft Metals	3,426.0	3,426.0	1,239.0
Klune S.F.	5 - Axis	61" - 120"	Soft Metals	1,496.0	1,430.0	(428.0)
Klune S.F.	3 - Axis	< 40"	Hard Metals	17,952.0	13,338.0	6,739.9
Klune S.F.	3 - Axis	41" - 60"	Hard Metals	1,496.0	910.0	799.3
Klune S.F.	3 - Axis	61" - 120"	Hard Metals	1,496.0	910.0	(2,148.1)
Klune S.F.	4 - Axis	< 40"	Hard Metals	22,440.0	19,838.0	3,610.8
Klune S.F.	5 - Axis	< 40"	Hard Metals	2,992.0	2,730.0	1,287.0
Klune S.F.	5 - Axis	41" - 60"	Hard Metals	5,984.0	5,902.0	(503.1)

One Stop Shop



Complex Machining

Chemical Conversion

Prime / Top Coat

Assembly

Composites

Kitting

Agenda

8:00am	Registration/Continental Breakfast
8:30am	Welcome Remarks and Forum Introduction
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11:45am	Q&A
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12:50pm	MEP Assistance Opportunities and Available Resources
1:30pm	Q&A
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2:00pm	Transition to One-on-One Meetings among OEMs and Suppliers
2:10pm	Networking Reception Concurrent with One-on-One Meetings
5:00pm	Adjourn





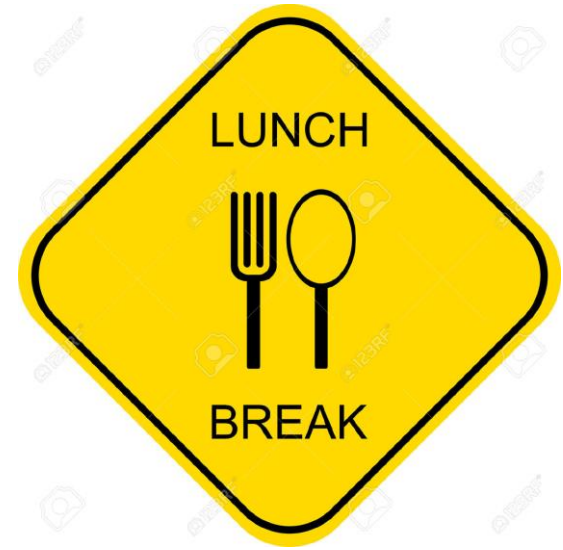
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LUNCH

- Lunch Buffet is provided in the back of the room
- **We plan to reconvene promptly at 12:50pm**

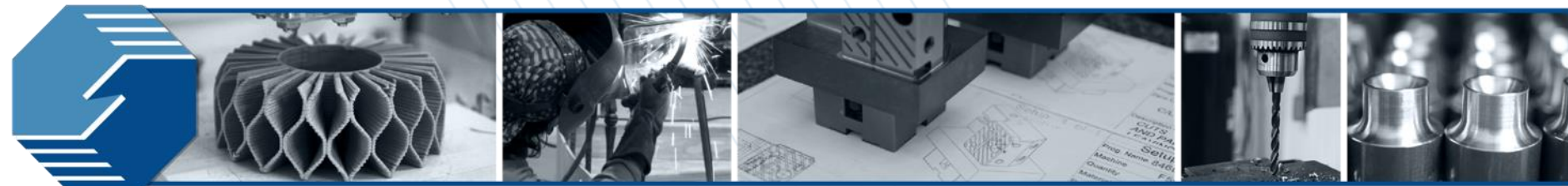


**DON'T FORGET TO STOP BY THE
REGISTRATION DESK TO SIGN UP FOR
YOUR ONE-ON-ONE MEETINGS**

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MAKING AN IMPACT ON U.S. MANUFACTURING

MEP Assistance Opportunities and Available Resources

Buy America Transit Supply Chain Connectivity Forum
Salt Lake City, UT
June 24, 2015

David Stieren
Technical Manager, Program Development
NIST MEP
david.stieren@nist.gov

Samm Bowman
Business Specialist, Program Development
NIST MEP
samm.bowman@nist.gov

www.nist.gov/mep

NIST Overview

- Serve as the National Metrology Institute for the U.S.
- Responsible for Nation's measurement infrastructure – focused on measurements, standards, technology
- ~ 3,000 employees
- ~ 2,700 associates, facilities users
- ~ 1,200 field staff in partner organizations

Main programs:

- NIST Labs
- **Hollings Manufacturing Extension Partnership (MEP)**
- Baldrige Performance Excellence Program

Gaithersburg, MD



Boulder, CO



©Christina Kiffney Photography



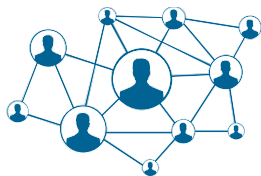
JILA

Collaborations:

JILA, JQI, HML,
IBBR, ChiMaD,
NCCoE



MEP Summary



National Network

At least one center in all 50 U.S. states plus Puerto Rico. System-wide non-Federal staff of over 1,200 individuals in >400 service locations assisting U.S. manufacturers. Contracting with >2,500 3rd party service providers



Partnership Model

Federal, State and Industry



Local → National Connection

System of Centers providing localized service to manufacturers in each State – with National reach and resources



Global Competitiveness

Mission to provide direct, hands-on tech & business assistance to domestic manufacturers to help them compete and grow



MEP Budget & Business Model

\$130M FY15 Federal Budget
with Cost Share Requirements for Centers



Rail Relevance for Small Mfrs

Annually serve thousands of small U.S. manufacturers; partnering with U.S. DOT – *MEP facilitating rail / transportation connections to small U.S. manufacturers*



MEP National Network

www.nist.gov/mep



What MEP Does



- ✓ Work with small and medium size manufacturers to help them create and retain jobs, increase profits and save time and money
- ✓ Focus on meeting manufacturer's short term needs, but in context of overall company strategy.
- ✓ Reach over **30,000 manufacturing firms** and complete over **10,000 projects** per year.
- ✓ Provides companies with a consistent set of services



MEP Program Initiatives



MEP's Program Initiatives

are aimed to help manufacturers identify opportunities that will accelerate and strengthen their growth and competitiveness in the global marketplace



Client Impacts

MEP CLIENT IMPACTS

30,056
Manufacturers
served in FY2014



Each year, the MEP network has helped thousands of manufacturers increase profits, create jobs and establish a foundation for long-term business growth and productivity.

\$6.7 Billion
New and Retained Sales

63,954
Total Created and
Retained Jobs

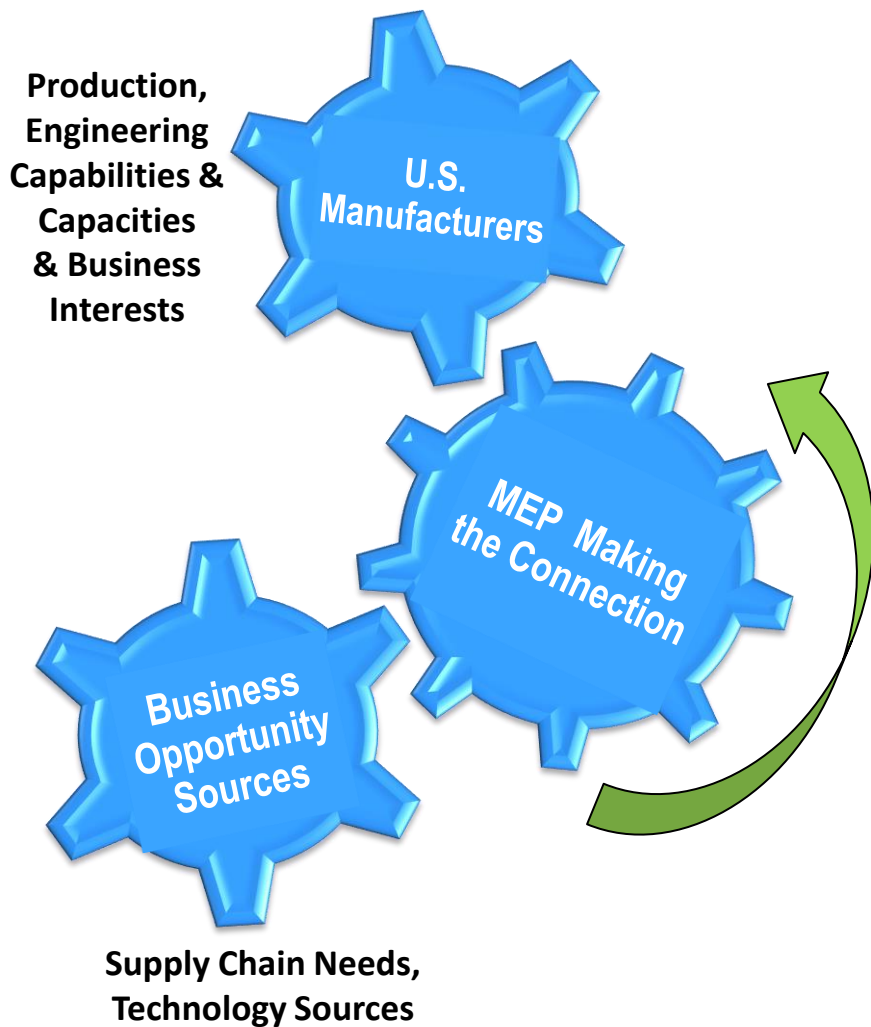
\$2.7 Billion
New Client Investments

\$1.1 Billion
Cost Savings

Results reported by MEP clients receiving services in FY2014. Of the 8,353 clients selected to be surveyed, 6,088 completed the survey. Measures are a conservative snapshot of benefits. Recurring or cumulative benefits may be larger.



MEP: Connecting and Assisting U.S. Manufacturers

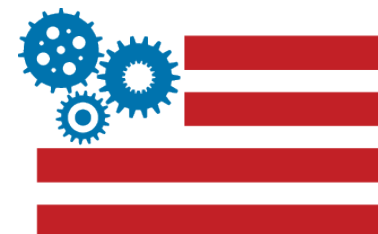


- Enhance business opportunities for U.S. manufacturers
- *Connect* products, capabilities, capacities of U.S. (small) manufacturers with:
 - ✓ *New market opportunities*
 - ✓ *Supply chain needs of OEMs, Tier 1s, gov agencies*
- Provide *assistance* to manufacturers, including:
 - ✓ *Technical manufacturing services for products, processes*
 - *Manufacturing Strategy, Scale-up*
 - *Production Optimization, (Re)tooling (Lean/Quality)*
 - ✓ *Supply Chain Requirements and Market Diversification*
 - ✓ *Innovation and Product/Process Development*
 - ✓ *IP Management and Financing/Access to Capital*
 - ✓ *Workforce Development*
 - ✓ *Environmental Sustainability*
 - ✓ *Exporting*

MEP Supplier Scouting

- Leverages nationwide network of Supplier Scouts in MEP Centers to connect capabilities, capacities, business interests of small U.S. mfrs w/needs, business opportunities of manufacturing supply chains.
- Includes connecting small U.S. manufacturers w/procurement opportunities tied to gov. agency Buy America(n) requirements for domestic content.
- Identifies and connects domestic manufacturers with business opportunities for supply chains in the following industry sectors^{**}:
 - ✓ *passenger and freight rail cars and rail locomotives*
 - ✓ *railroad track and physical infrastructure*
 - ✓ highway and waterborne transportation systems
 - ✓ defense weapon systems and defense support equipment
 - ✓ energy-related products
 - ✓ laboratory instruments
 - ✓ various consumer products
 - ✓ power utilities

^{}has included identifying small domestic manufacturers w/particular demographic attributes – such as DBE, MOSB, VOSB, WOSB, etc.**



MAKE IT IN AMERICA
MANUFACTURING EXTENSION PARTNERSHIP



15

Participating Organizations



~200

Items Scouted



60+ Identified
Suppliers



>\$40M New Business
Opportunities



MEP Supplier Scouting and Buy America Transit Supply Chain Connectivity and Development

The nationwide MEP Network is actively assisting in the development of more robust domestic supply base for transit equipment in the U.S



- ✓ Interagency Agreement between DOT FTA and NIST MEP
- ✓ NIST MEP coordinate national, system-wide MEP efforts
- ✓ MEP Supplier Scouting conducted by Centers to ID manufacturers both **capable of** and **interested in** supplying needed manufactured goods
 - Include manufacturers currently serving transit industries + manufacturers from other sectors (auto, defense, aero, industrial controls / electronics, others ?)
- ✓ MEP available to assist domestic manufacturers with needs and requirements to enter transit supply chains and become suppliers



Buy America Transit Supply Chain Connectivity *Next Steps*



- **Today's Supply Chain Connectivity Forum**
 - ✓ NIST MEP to post slides for access by participants, interested entities at www.nist.gov/mep
- **MEP Assistance to Manufacturers**
 - ✓ Local MEP Centers available to work with manufacturers at the local level to provide assistance in response to needs – resulting from today's Forum and other needs
 - In Utah, contact UT MEP: www.mep.org
 - ✓ NIST MEP available to coordinate national level MEP assistance resulting from today's Forum, such as supplier scouting, supplier development and improvement, other, ...
 - NIST MEP: www.nist.gov/mep



Thank You

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Get the latest NISTMEP news at:

www.nist.gov/mep





MEP.ORG
PROFITABILITY IN
MANUFACTURING

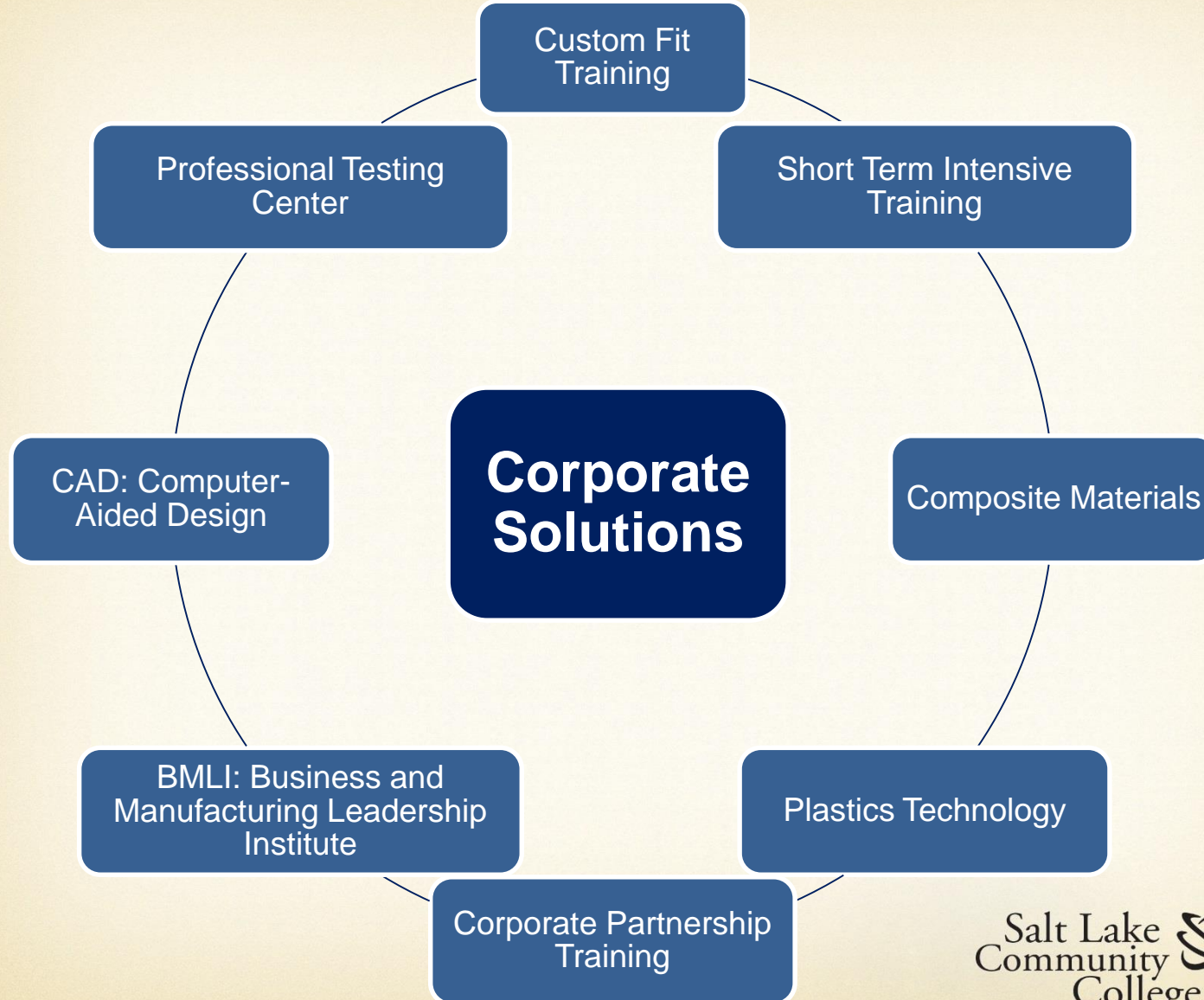
Chad Parker
Executive Director





Our flexible approach to learning allows us to create solutions for your training needs.







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THANK YOU!!

